UNIVERSITY OF ALBERTA

SCHOOL SAFETY PATROL TEACHER SUPERVISORS AS RISK MANAGERS

BY

ELIZABETH ALKE

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "School Safety Patrol Teacher Supervisors as Risk Managers" submitted by Harriet Elizabeth Alke in partial fulfillment of the requirements for the degree of Master of Education in Adult and Higher Education.

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Dedication

This thesis is dedicated to school safety patrol teacher supervisors and school safety patrollers.

ABSTRACT

This study explored the experience of six adult school personnel, including four grade six teachers, who supervise the school safety patrol program at their respective schools. The original purpose of this study was to determine research participant's views on the enhancement of the school safety patrol as a Community Leadership Program (CLP). The intent of the CLP is to facilitate community ownership of traffic safety issues. Research participants represent a significant group of educators, which has implications for both community ownership of traffic safety issues and disseminating the CLP.

Qualitative, semi-structured interviews, open coding and the literature review revealed not only logistics for developing the CLP, but risk management strategies among research participants. The risk management experience of research participants in this study and the outdoor educators studied by Zenk and Leberman (2001) locates both groups of educators in the subjective, informal but none-the-less effective, risk management sector. Positioning this in the informal sector has positive implications for traffic safety education in general and for the safety audit and lobbying component of the CLP.

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These same Mission Possible personnel provided funding and fieldwork opportunities prior to implementing this formal study that led to the development of the research problem. They also identified the exemplary school safety patrol teacher supervisors who participated in this study.

Thanks also are due to the busy teacher supervisors who took time out of their busy end of year duties and impressed me so profoundly.

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CHAPTER ONE
THE RESEARCH PROBLEM

This qualitative research study explored the views of six adult elementary school personnel who supervise 11-12 year old school safety patrollers (crosswalk guards) at their respective schools in Edmonton, Alberta. The elementary school personnel who served as research participants in this study included one elementary school principal, four elementary school teachers and one teacher's aid. For the remainder of this study, these research participants are referred to as teacher supervisors. That is the name given them by the patrol program sponsor: the Alberta Motor Association (AMA). The purpose of this study was to capture the views of these teacher supervisors on their roles and on opportunities and barriers to developing an enhancement to the school safety patrol program.

The proposed program enhancement envisions school safety patrollers acting as spokespersons for traffic safety and is called the School Safety Patrol Community Leadership Program (CLP). The CLP was proposed in 1996 by the Alberta Motor Association (AMA, 1996, p. 92). The AMA has sponsored the traditional school safety patrol program for over 60 years (AMA, 1998, History of the Patrol) as a community service. The AMA provided access to research participants and also funded three phases of fieldwork preceding this study.

Research Problem

Following the three phases of fieldwork noted in Figure 4 (p. 15), I developed the wording of the research problem and a thesis proposal in the spring of 1998. The wording of the original research question, prior to data collection, was

1. What opportunities can exemplary teacher-supervisors in Edmonton area elementary schools (K-6) identify for the development and implementation of the school safety patrol Community Leadership Program (CLP)?

Sub-problems

1) What are the opinions of exemplary teacher supervisors in Edmonton area elementary schools (K-6) regarding the proposed enhancement of the Community Leadership Program?

2) What do exemplary teacher supervisors in Edmonton area elementary schools (K-6) see as opportunities and barriers to the Community Leadership Program within their schools and within the surrounding community?

3) How do exemplary teacher supervisors in Edmonton area elementary schools (K-6) envision adult roles, including their own, in the Community Leadership Program within their schools and the surrounding community?

Shift in Original Questions

Alverman, O'Brien, and Dillon (1996) anticipate the problem that the original questions in a study may shift. Hence, they suggest the need "for an explanation of when and why the research questions may have shifted during the study" (p. 116). In this study of teacher supervisors it became apparent early on that research sub-question one wasn't necessary. All research participants view the CLP very positively and had already implemented some of its components. Question two, however, remained valid throughout the interviews. More importantly, a simpler form of question three came to dominate the interviews. Hence question three became "How do teacher supervisors describe their current roles in the patrol program and in school intersections?"

Organization of Chapter One

The first third of Chapter One defines the terminology used in this study, including the regular patrol program, teacher supervisors' traditional roles and the CLP. The next section describes the genesis of the research problem, including fieldwork that helped narrow the research topic to a study of the views of teacher supervisors. Immediately following the description of research catalysts are components traditionally included in a thesis: theoretical

influences and practical significance of this study, professional influences, biases, assumptions, limitations. The final section of Chapter One consists of a summary and description of the organization of the remaining Chapters in this thesis.

Terminology

Roles

Oxford University Press defines the term *role* as "The behavior expected of individuals who occupy a specific status or, metaphorically, the part each person is called on to play in the social drama, together with its attendant privileges and responsibilities" (1990, p. 418). Jarvis (1990) includes some latitude for self-determination in his definition of the term role as "The manner [in which] people fashion their own social behavior within designated social positions" (p. 160). Webster defines the term role as "A character assigned or assumed... a socially expected behavior pattern usually determined by an individual's status in a particular society" (Webster, 1998, p. 1021).

History of the Patrol

"As far as can be ascertained, the School Safety Patrol Program was born in 1922 ...In Chicago...and from that date through to 1950, child fatalities dropped 62 percent....Records show that Canadian patrols started in 1929 in the province of Quebec" (Canadian Automobile Association (CAA) (CAA, 2003, p.1). Calgary and Edmonton, in Alberta, Canada started patrol programs in 1937. Currently there are over 550 schools and 16,000 patrollers participating in the Alberta school safety patrol program (AMA, 1998, p. 4-5). The CAA estimates there are over 100 000 school and bus patrollers in Canada and that there are patrol programs in over 20 other countries (p. 1). Children in grades five and six, ages 11-2 are eligible to participate. Their mandate appears deceptively simple: "ensuring safe crossing for fellow students" (AMA, 1998, p. 9).

Figure 1
AMA School Safety Patrol Job Descriptions

Team/Leader/Captain

All positions within the patrol are of equal importance. However, Team Leaders should be appointed from each patrol team. Team Leaders are responsible for:

- setting, maintaining, and executing the daily schedule. This is done with the assistance of the Teacher/Supervisor.
- monitoring the patrollers at the crosswalk to ensure proper procedures are used.
- monitoring equipment for damage or loss.
- maintaining the Officer's Record Book, recording patroller attendance and
- performance.
- reporting any problems to the Patrol Supervisor.
- chairing patroller meetings.

Team Coordinator/Assistant

The team coordinator is responsible for:

- taking charge of the street crossing point
- reporting any problems to the Team Leader
- taking over the duties of the Team Leader when required
- ensuring the appearance of the patrollers is within guidelines
- acting as secretary at the patrol meetings
- recording information which will identify vehicles compromising safety at the crossing

Patrollers
The patrollers are responsible for:

- ensuring safe crossing for fellow students
- teaching safe crossing procedures to fellow students
- recording information which will identify vehicles compromising safety at the crossing
- preparing to assume the duties of the Team Coordinator

Source: AMA 1998, p. 8-9

Patrol Structure

The AMA employs one adult provincial coordinator for the whole province of Alberta. Seven coordinators visit participating schools three times a year to train patrollers and trouble shoot. Again, because the patrol has been an oral culture for most of its 60 years, the official job description of teacher supervisors does not encompass the experience research participants in this study described.

The Patrol's Oral Culture

The absence of information on the role of teacher supervisors is one reason for this study. The AMA School Safety Patrol has functioned as an oral culture for most of its history. In 1996, about the same time as fieldwork for this study started, the AMA began to standardize patrol practices. AMA personnel launched the AMA School Safety Patrol website in 1998.

School Safety Patrollers

Understanding the duties of 11-12 year old school safety patrollers as shown in Figure 1, page 4, is a pre-requisite for understanding the role of patrol teacher supervisors. This is necessary because, with the exception of one paragraph on teacher supervisors, most of what is published about the school safety patrol deals with patroller activities not teacher supervisors.

Patrol Teacher Supervisors

The AMA teacher's handbook (1998) describes guidelines for teacher supervisors. It also includes forms and suggestions for organizing and monitoring patrollers. These standard operating procedures are just that: routine logistics. Teacher supervisors do not train patrollers. Nor do teacher supervisors receive formal training. The official description of the teacher supervisor role is

"Directly responsible for the School Safety Patrols, the Supervisor guides the patrols through their day-to-day activities, through scheduling, trouble-shooting, support and direct supervision of the Patrol at the crossing on a regular basis. They will also be responsible for ordering equipment through the AMA and School Patrol Coordinators" (AMA, 1998, p. 9).

The School Safety Patrol Community Leadership Program (CLP)

The patrol program is a good example of an existing network through which safety information can be communicated. "The School Safety Patrol is an effective way to keep

Alberta Children safe from traffic injuries around schools. However, this resource is underutilized. This group of individuals is ideally positioned to contribute to the traffic safety education of their peers and under-classmates" (AMA, 1996, p. 93). Hence the goals shown in Figure 2 on page 7 were formulated as one initiative within the Mission Possible strategy.

Opportunities and Barriers

Webster (1989) defines the term *opportunity* as "favorable juncture of circumstances" and "a good chance for advancement or progress" (p. 829). Webster defines the term *barrier* in one sense as "something immaterial that impedes or separates…a factor that tends to restrict free movement" (p. 132). Jarvis (1999) defines 'barriers to participation' as referring to "the obstacles which appear to prevent [people] from joining such activities." He goes on to say that there are three types of barriers: situational, institutional and time-tabling [or scheduling]" (p.15).

Intersections and Crosswalks

Defining the terms *intersection* and *crosswalk* here is warranted for a number of reasons. For one, the terms appear in teacher supervisor and patroller job descriptions. For another, the data collected to satisfy the first part of research sub-problem three (see page 2), on how teacher supervisors envision their own and other adult roles, largely contains descriptions of what happens within school intersections and at crosswalks.

Safety Audits

Conducting safety audits is one of the goals in the CLP. Webster defines the term *safety audit* as "a methodological examination and review" (Webster p. 115). When I searched the internet for the term safety audit I found over 23 sites, most of which contained the terms *audit* and *risk*. The City of Victoria defines audit as "an inspection of a place to discover risks to audit as " an inspection of a place to discover risks to personal safety" (2002, p 1). The U.S. National Highway Traffic safety Agency (NHTSAA) website *How Walkable is Your Community? (September, 1997. pp.1-4)* contains a checklist, or survey.

Figure 2
(School Safety Patrol) Community Leadership Program

Purpose

- To reduce the risk of road trauma to school children and to raise awareness of pedestrian safety among drivers by expanding the role of the School Safety Patrol in the Community.
- To use school safety patrollers as ambassadors for traffic safety by arranging for them to speak to classmates, school assemblies, community groups, service clubs, and news media etc.
- To train and equip school safety patrollers to conduct neighborhood safety audits, including designation of *safe routes home*: for elementary-grade students.
- To use school safety patrollers in appropriate safety awareness campaigns.

Resources

Patrollers, Parents, Teachers, Police service

Process

Maintain existing school safety patrol activities
Develop presentation materials
Schedule spokespersons and
Develop spokesperson selection criteria
Schedule spokespersons and presentations
Conduct safety audits, collect data, report
Provide public speaking training at annual
camp
Publicize the program
Lobby for required changes
Identify safety campaign
Select spokespersons
Produce Spots

Research

A majority of those surveyed in the 1994 AMA Member Survey felt that the School Safety Patrol is an effective way to keep Alberta children safe from traffic injuries around schools. However, this resource is underutilized. This group of individuals is ideally positioned to contribute to the traffic safety education of their peers and under-classmates. As previously shown, numerous studies show the need for lifelong learning.

Evaluation

Evaluation forms from students and other audiences
Pedestrian and cycling injury data

Source: AMA, 1996, p. 92

containing five questions about some of the same risks identified by the teacher supervisors. It also contains advice on what to do if the audit identifies things that need to be changed (p. 4).

Intersections

Van der Molen, Rothengatter and Vinje (1981) define an *intersection* as a "site where two or more streets come together" (p. 178). These authors and others working on the same problem often use intersection diagrams to illustrate the context of their work (e.g., Demetre, Lee, Grieve, Pitcairn, Amofo-Boateng and Thomson, 1993, p. 351; Van der Molen, Rothengatter and Vinje, 1981, pp. 178-179), because that is where they've found that the most effective learning about traffic safety takes place (Thomson, Tolmie, Foot, Mclaren, 1996, p. 3). City of Edmonton Traffic Bylaws (2002) define intersections as *highways*[1] which join one another at an angle" (Part 102, section 25). The legal definitions of intersections used by the Government of British Columbia (1996) and the Province of Nova Scotia (1989) as well as Transport Canada (2002) use similar wording.

Crosswalks

The Edmonton Traffic Bylaw defines *crosswalks* as "any part of a roadway at an intersection or else where distinctly indicated for pedestrian crossing by traffic control devices or by lines or by other markings on the road surface." (City of Edmonton, 2002c). Many technical decisions contribute to the physical traffic environment of crosswalks. These include whether or not there is a painted crosswalk, lights, stop signs and where bus stops, shelters and benches are located (City of Edmonton Transportation Planning Branch, 1994). The Nova Scotia vehicle act names five types of crosswalks: signalized, special (i.e., with buttons that actuate flashing amber beacons which alert motorists to their presence), marked crosswalks,

[1] The term 'highway' is a very inclusive term referring to "any thoroughfare, street, road, trail, avenue, parkway, viaduct, lane, alley, square, bridge, The term 'highway'is a very inclusive term referring to "any thoroughfare, street, road, trail, avenue, parkway, viaduct, lane, alley, trestle way or other place whether publicly or privately owned, any part of which the public is ordinarily entitled or permitted to use for the passage or parking of vehicles. (Edmonton Traffic Bylaw, Part one Definitions, section 13 D, updated August 2002)."

unmarked crosswalks, and those with long, illuminated overhead orange or yellow signs with the word crosswalk' on them (1989).

Complexity

The above definitions of intersections and crosswalks suggest a variety of configurations. Van der Molen (1981), in fact, identified 32 traffic system characteristics (Figure 5, p. 33) and classified them into groups that resemble the risk classifications of environment, equipment and people. Lonero has identified 52 "Factors Influencing Driver Behavior" (Figure 6, p. 35). And Van der Molen, Rothengatter and Vinje (1981) identified 26 pedestrian tasks (p. 175). Should implications of these numbers not suggest the complex nature of traffic in school intersections, add in about 400[2] crossings by children each day. Then add 1900 to 6700 vehicles[3] to the mix passing through school intersections on a daily basis (Audra Jones, Personal Communication, August 7th, 2001).

Genesis of the Research Problem

The Alberta Motor Association

One catalyst for this study was the AMA's mandate, which is best described in their own wording.

> Since 1926, the Alberta Motor Association has been both advocate and servant for the motor vehicle owner and traveler. It is now the province's leading proponent on motoring and related consumer issues and the premier supplier of automotive and other travel services. (AMA, 2002, under History).

AMA's Mission Possible

Another catalyst for this research study was the AMA's Mission *Possible*. Mission Possible proposed to "motivate communities to take ownership of [local traffic problems]" (p. 16). The CLP is one of the 26 initiatives contained in Mission Possible. Mission Possible is

> a province-wide initiative, founded on partnerships, that allows individuals, organizations and communities sharing a sense of concern and urgency over

[2] Based on an elementary school with a population of 200 crossing the street twice a day.
[3] These figures represent the lowest and highest traffic volumes at each of the six schools where research participants teach.

> traffic safety issues to act together. Working collectively and effectively through integrated, innovative programs will enable Alberta to be a leader in reducing motor vehicle trauma and its associated costs....Mission Possible is a living document, flexible and dynamic in its origins, responsive to partnership needs and community input.
>
> Effective networks for the distribution of information and programming already exist in the form of successful injury prevention committees, coalitions, and community service organizations. It is these organizations, based in the community, supported by the community and its members, which will sustain and carry the message of change to all Albertans. (AMA, 1996, pp. 9-13).

Mission Possible also proposed to lower traffic collisions through partnerships with organizations that have various capabilities, including research (p. 103).

Collision Statistics

The main catalyst for Mission Possible itself was escalating trends in injuries and property damage. Table 1 illustrates that 341 Albertans died in traffic collisions in 2001, while 19,000 were injured.

Table 1
Alberta Traffic Collisions 1997-2001
Source: Alberta Transportation and Streets, 2002, p.18

Severity	1997	1998	1999	2000	2001
Fatal	357	358	305	312	341
Non Non-Fatal	16,231	16, 987	17,398	18,246	19, 000
Injury					
Property	75,777	81,256	77,543	85,905	88, 050
Total	92,365	98,601	95, 246	104,463	107, 391

The Need for a Research Problem

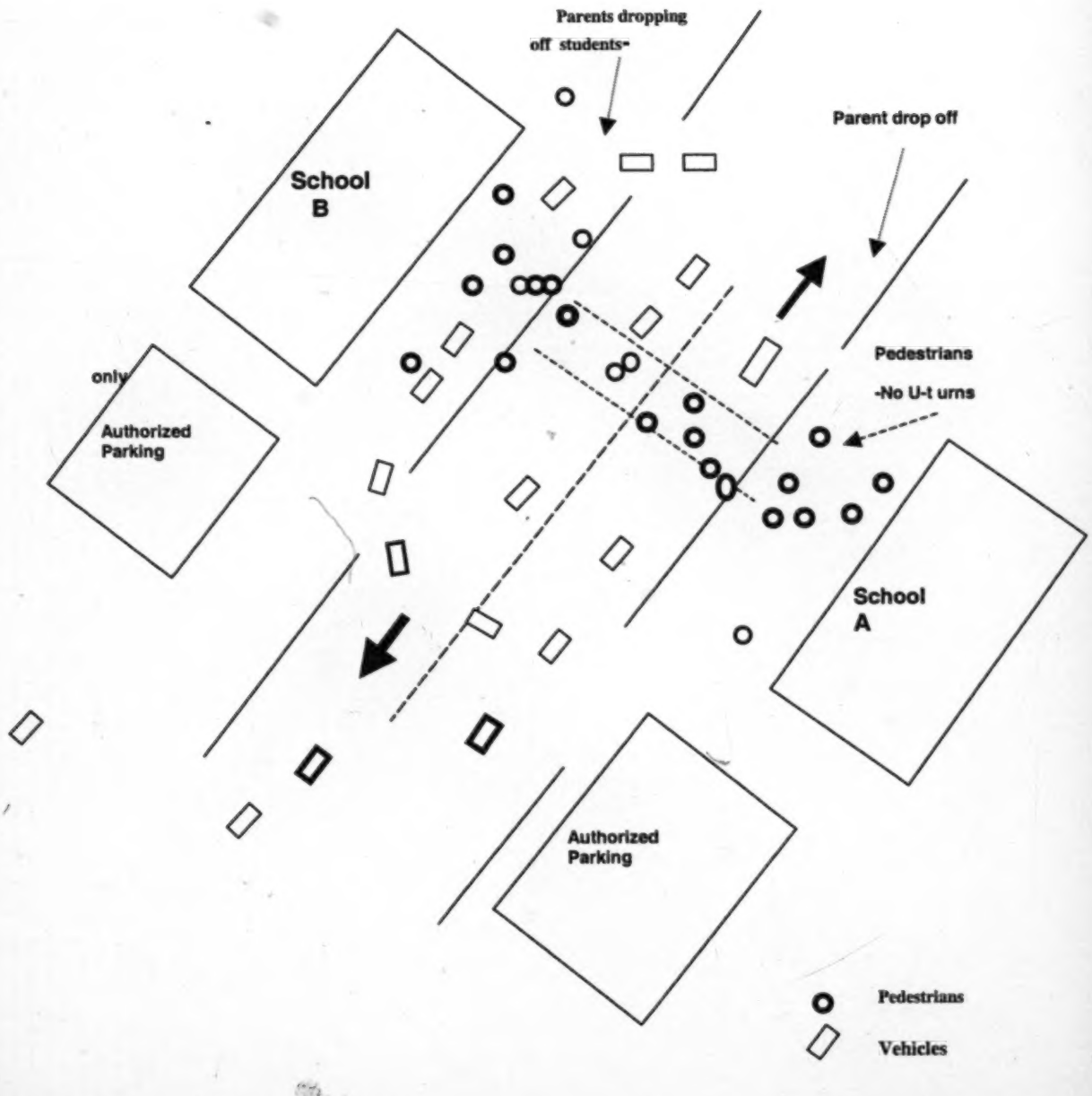
The Mission Possible goal of partnering with research organizations represented an opportunity for my thesis advisor, who had a prior working relationship with the AMA, to generate research experience for graduate student fieldwork. I was recruited through his subsequent invitation to graduate students enrolled in a community development course.

Fieldwork

In reading about the design of a study, I want to know if the researcher has spent an extended time in the field (Alverman et al., 1996, p. 115)

As shown in Figure 3 on page 12, fieldwork took place in three phases. The first phase commenced with an observation of traffic at two adjacent elementary school crosswalks during morning rush hour. An Edmonton police officer detailed to a program called the *Parent Parking Patrol* hosted the visit, provided an orientation to the program and introduced me to the parent volunteer committee coordinator (Fieldnotes, 1996, p. 15-22). Figure 3 illustrates the flow of traffic at two schools that were not included in this study and the differences between them. School A *has* established rules for motorists and students and a Parent Parking Patrol. School B *does not* have a Parent Parking Patrol.

Figure 3
Observation of Morning Rush Hour
Fieldnotes October 24, 1996



The poem below best summarizes the significance of the unruly parental/motorist drop-offs.

Thought for the Day

When you pick me up in the bus zone
In a hurry to be on your way
Or tell me to j-walk across the street
What did you teach me today?

When you stop your car in the middle of the street
So I'm on time for school that day
And disregard the parking patrollers
What did you teach me today?

When you park in the handicap stall
To get "the parking spot of the day"
And disrespect the person who needs it
What did you teach me today?

I know that you truly care about me
And the other kids on their way
But when you break the traffic laws
What did you teach me today?

Printed with permission from Kathy Bower 1998

"Snowball sampling" (Gall et al., 1996, p. 234) during this research phase one brought me into contact with an RCMP Community Liaison officer (Al Fraser, Personal Communication, October 10, 1996) who delivers traffic safety education to children. The first phase of research also revealed an electronic bibliography of research on developmental issues and road use training pertaining to elementary school children (Early Childhood Road Safety Education Program, 1997).

Phases two and three were conducted under contract for Mission Possible and took four months (April to August, 1997). Figure 4 on page 15 summarizes the objectives, results and recommendations of each phase of research. That is, in phase two, I did a literature review and environmental scan on the potential for the Safe Communities Foundation as a partner for Mission Possible. Phase three involved conducting a literature review, introducing cooperative

learning strategies to AMA staff who run summer patroller camps and observing the results at camp sessions.

After reading the report for phase three on the feasibility of patroller camps as sites for developing the CLP, my thesis advisor not myself or my colleagues at the AMA, saw the potential of the CLP as a graduate thesis project.

Once this research focus was proposed, agreement was reached by October 1997. Design of this study followed in early 1998, and the AMA identified the teacher supervisors to be interviewed in early May 1998. Data collection took place in May and June 1998.

Theoretical Frameworks

Anxiety is my constant companion when I wonder how much I should write about theory...
–David O'Brien in Alverman et al.,, (1996, p. 115)

O'Brien (in Alverman et al.,, 1996) identifies two levels of theory. On one level, theory refers to "a theoretical framework that ultimately influences topic selection and methodological issues such as research design and analysis" (Le Compte and Preissle, 1993, in Alverman et al., 1996, p. 115). On a second level, theory can refer to the 'substantive work of a discipline' in which a study is embedded. The same author suggests that "the two levels reciprocally influence each other" (115).

Theoretical Frameworks

At the most inclusive *framework* level, the first theoretical influence on this study was grounded theory as described by Strauss and Corbin (1990, p. 23).

> Grounded theory is one that is inductively derived from the study of the phenomenon it represents. ...One does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge (p. 23) influenced the choice of qualitative research methodology, the data analysis and the interplay between data analysis and the review of literature (p. 55).

The second most inclusive theory that influenced this study was that of community development, which assumes that lasting social change is best achieved by local stakeholders

Figure 4 Fieldwork 1996 – 1997		
Phase	Results	Next Steps
Phase One (Oct. – Jan. '96) ▪ School Councils as a community of interest ▪ Parent Parking Patrol	▪ Traffic Congestion ▪ Only one school council interested in research partnership ▪ Parent Parking patrol too controversial because of conflict among volunteers and adult motorists & pedestrians.	Find other stakeholders
Phase Two (April to Aug. 97) Safe Communities Foundation (SFC)* as partner with Mission Possible?	(SCF)* Not well enough developed to handle another goal. Increased knowledge and understanding of strategic planning.	Look for different partners
Phase Three (April-Aug. 97) Feasibility of patroller summer camps as sites for testing the community leadership program?	Patrollers already have presentation and cooperative learning skills. CLP and the patrol represent an interesting context for generating new knowledge	Draft the patrol's existing curriculum as a benchmark for development of the Community leadership program. Draft Thesis Proposal

(London in Hamilton, 1992, p. 29). Hamilton illuminates the link between theories of community development and this study of teacher supervisors, their roles and their views of the CLP. "The basic assumption is that there are factors that encourage change and factors that prevent change. The principal task of the adult educator is to assist in identifying these factors …Values clarification is an underlying component of …the process" (p. 90-91).

Theory at the Research Discipline Level

At the less inclusive theoretical level of research disciplines, two bodies of work influenced this study. The first body of research work that influenced this study was a branch of developmental psychology, which thoroughly explored young children's capacity as road users and how to enhance their skills (Early Childhood Road Safety Education Program, 1997). Researchers in this discipline built upon theories proposed by Piaget and Vygotsky (Thomson, Tolmie, Foot, Mclaren, 1996, p. 4-5). Essentially, this body of work captures what is known about best practices for enhancing children's road crossing skills and keeping them safe: the core purpose of the patrol and teacher supervisors. Hence, the discipline of developmental psychology, narrowed to that dealing with children as road users, informed fieldwork and provided insights into the nuances of teacher supervisor responsibilities even before the focus of this study was determined. The work of developmental psychologists studying children as road users also influenced the development of the research problem and the nature of interview questions.

Neither the literature on community development nor children's capacity as road users, read prior to data collection, explained what was going on in the data. However, axial and selective coding as laid out by Strauss and Corbin (1990, Chapters 7-8) solved the problem by revealing a theme of risk management and suggesting investigation of literature in this discipline (p. 55). More specifically, it revealed a body of work on risk as a social construction (Adams, 1994 and Douglas and Wildavsky, 1982) in the informal (non-expert)

sector among outdoor educators (Zenk and Leberman, 2001). The approach of outdoor educators to risk closely resembled the self-described roles of teacher supervisors.

Significance to Theory and Practice

The significance of this study to the inclusive theories of community development and risk management is modest. The choice of research participants and the richness of the data, for example, suggest the importance of offering assistance to community initiatives "only after a period of immersion…in the community group activities" (Brookfield, in Hamilton, 1992, p. 28). Hence, the significance of this study to theories of community development is that such immersion provides valuable insights into the thinking of stakeholders such as teacher supervisors.

Methodology

The choice of patrol teacher supervisors as research participants extends Thomson and Whelan's (1997) choice of adult volunteers as research participants. At the research design level, this study parallels the qualitative research interviews and data analysis procedures used by Zenk and Leberman (2001) in their study of risk and outdoor educators. The use of qualitative methods such as research interviews and open coding of the resulting transcripts by Zenk and Leberman and in this study, represents a methodological departure from mainstream research practices in the fields of traffic safety and outdoor education. These disciplines are dominated by quantitative research and casualty statistics (Adams, 1995, p. 10).

Significance to Practice

From a practical perspective, the research precisely addresses the AMA's needs for developing and implementing the Community Leadership Program. This study also has practical significance to other traffic safety education program developers because it reveals positive conditions for program adoption by teachers (London in Hamilton, 1992, p. 67). The context of the research – the school safety patrol program– with its provincial, national and international counterparts has practical significance to the challenge of large-scale

implementation and dissemination of traffic safety education posed by Thomson (In Gillham and Thomson Eds. 1996, pp. 102-103).

Professional Influences

In terms of prior research experience, I completed components of several studies prior to 1998 when I collected the data for this study of teacher supervisors. These components included (a) observations for the National Early Years Project, (b) a literature review on community development precedents among marginalized workers (c) an environmental scan on cardiac-care staffing levels across Canada, and (d) an environmental scan among health information providers in Edmonton. The position I now hold as a Research Analyst with Edmonton Transit Service provided me with some terminology to use as codes during analysis of the data. It also alerted me to the existence of City of Edmonton Transportation and Streets Department traffic volume data (2002) and the process of requesting changes to traffic facilities (e.g., adding a painted crosswalk) (Transportation and Streets, 1994).

A resume of my work experience is included in Appendix G. It should be noted that I am not a teacher. My 20 years of experience in educational publishing, including environmental education, compelled my interest in adult education and community development. Being an editor for 20 years and having an undergraduate degree in English literature (B.A. 1976, University of British Columbia) likely disposed me to be more sensitive to language than to the pedagogical implications of the data (Art Deane, Personal Communication, 2002). Taking a week-long data analysis workshop with Juliet Corbin and using the questioning techniques in Strauss and Corbin (1990) probably added to this sensitivity. This training was certainly responsible for the discovery of the theme of risk management in the data.

Bias

Some of the biases I held at the outset of this study and prior to data collection included some anxiety about whether teachers would be interested at all in the CLP program.

And subsequently, "Will this be such a hard sell it will invalidate my research topic?" I also did not, at least initially, approve of the idea of downloading responsibility for traffic safety to children or to teachers (City of Edmonton, 2001, p.1). However, the stakeholders I interviewed during gaining entry activities all reported that it is nearly impossible to recruit adults to formal traffic safety education events or keep them involved in programs like the Parent Parking Patrol (Fieldnotes, October 1996, p. 1-22).

As a final note, because I am not a teacher, being in elementary schools for the first time in many years was a bit overwhelming. While hearing the stories of teacher supervisors, I was struck by the magnitude of their responsibilities and the potential emotional loss for themselves and students should a traffic-related injury occur at their school.

Assumptions

Teacher Supervisors as Stakeholders

A main assumption on which this study is based is that stakeholders, in this case teacher supervisors and patrollers, have a key role in developing and implementing the CLP. London believes that

> when both learners and educator cooperate in planning and program operation, educational needs have a greater likelihood of being fulfilled....when group members get involved they develop a sense of "ownership" because they have helped create the enterprise. The participants are further led to recognize needs which are not consciously felt, and planning can be as much a learning experience as can direct instruction (London, in Hamilton, 1992, p. 67).

The Patrol as a Critical Mass

Another assumption derived from the literature is that the collective of patrol programs in 550 elementary schools, about as many teacher supervisors and 16,000, 11-12 year-old patrollers across Alberta represent part of a *critical mass* (Hamilton, 1992, p. 46). That is, there are enough stakeholders within the patrol program to warrant raising awareness and lobby for changes in behavior in traffic environments. Furthermore, the patrol's pre-

existing network, central administration and common purpose make it a promising context for the distribution of traffic safety information.

Patroller Capacity

Yet another assumption arose from the literature on youth and their presentation skills and the third phase of fieldwork (Figure 4, p. 16). Literature on cooperative learning[4] (Mason, 1996; Semeniuk, 1997) and consultations with educators (Personal Communications, Julie Ellis, June, 18, 1997; Elaine Whitford, August 1997; Pat Colver, August 1997) revealed the pervasiveness of this teaching strategy within the elementary school curriculum.

These sources also predicted what was observed at camp. Participation in cooperative learning at school, which offers plenty of practice reporting and getting feedback, meant that most patrollers arrived at camp with the skills and abilities necessary to deliver presentations (AMA, 1997). Dovetailing these existing skills with school traffic safety issues is supported by Roberts who states that "Professionals should attempt to build on the 'lay knowledge' of ordinary people and communities...and use materials which enable children to draw on accident data for their own school and work on ways of reducing school accidents" (1992, p. 60-62).

Limitations

One limitation relevant to this study data was that the interviews with six teacher supervisors were conducted over the course of two weeks. Hence, during the data collection period there was not enough time to type out and code the transcripts: a practice that can enrich subsequent interviews. Despite this limitation, the data shows that important themes were revisited and enriched from one interview to the next (Strauss and Corbin 1990, p. 30).

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[4] Cooperative learning is used here to mean "the instructional use of small groups, so that students work together to maximize their own and each other's learning (Johnson and Johnson, 1992)."

Transcripts were transcribed immediately, so that by mid July 1998 all the transcripts had been reviewed and approved by participants (Kale, 1996).

The assumption that the data would be analyzed and the thesis written right away, became another limitation in this study. While the data for this study was collected in the summer of 1998, data analysis was not fully complete until 1999. I took a couple of steps to stay connected with the study. I participated in a committee set up to develop the CLP. Then I started a new full-time research position that gave me access to useful secondary traffic data. In 1999, I took a five-day qualitative data analysis workshop conducted by Juliet Corbin. Then I used these skills and NVIVO qualitative data analysis software to analyze qualitative customer information data in my research position at Edmonton Transit.

Literature

To compensate for the lack of literature on teacher supervisors, I concentrated my efforts on publications that focused on legal expectations of teachers with respect to extra-curricular and co-curricular activities (Alberta Teachers' Association, 1999; CEA, 1963). I also focused on what could be learned about each research participant's school. For example, during interviews I asked teacher supervisors about the size of the school population. Then I followed up by exploring municipal traffic volume data for these school intersections (Transportation and Streets, 2002).

It would be desirable to gather information on school safety patrol programs said to exist in 20 other countries. While counterparts in British Columbia and Quebec responded to queries, I chose not to pursue information from other countries. It would be more efficient to do an environmental scan using international telephone directories and the Internet. Should an environmental scan be done at some point, the knowledge generated by this study will go along way to gathering new information systematically.

Summary of Chapter One

The catalysts for the CLP and this study included macro-level catalysts such as escalating traffic-related injuries and Mission Possible. Existing roles within the patrol program and the goals for the CLP were defined to provide the reader with a sense of the context within which this study was conducted (Alverman, O'Brien, Dillon, 1996, p.116).

Chapter One went on to describe fieldwork that helped narrow the focus of this research enquiry to the views of teacher supervisors, the actual research problem and the terminology contained within it. Following these components, Chapter One briefly described the practical and theoretical significance of this study, my biases and theoretical influences as well as the assumptions upon which this study is based. Limitations pertaining to timing and available literature were identified along with how these limitations were compensated.

Organization of the Thesis

This thesis is organized in the traditional manner. Chapter Two contains a review of relevant literature. Chapter Three describes the methodology used. Chapter Four reports and summarizes findings, and Chapter Five contains a discussion, conclusions and recommendations. Chapter Five is followed by a list of references and Appendices A to G.

CHAPTER TWO
REVIEW OF THE LITERATURE

Determining the Relevant Discipline

> *It is the responsibility of the reviewer to recognize and acknowledge the nature of the discipline from which the work originates (–Hart 1998, p. 47.)*

Placing this study of teachers who supervise the K-6-based school safety patrol program in one discipline was somewhat problematic, because traffic safety issues range across numerous disciplines. For example, research with at least some bearing on this study spans public health, engineering, developmental psychology, community development, risk management, education and sociology. Adding to the challenge of locating and reviewing relevant literature, the notion of parental modeling linked to general child safety was arrived at much earlier (Arena and Bachar, 1973). Research with a focus on social factors such as parental influence on children as road users (Murray, 1998; West, Sammons and West, 1993; Peterson, Bartelstone, Kern and Gillies, 1995; Gillham and Thomson, 1996; Health Canada, 1996) and community standards (Lonero, in AMA, 1996, p. 35) were only beginning to emerge during the 1990s (Gillham and Thomson, 1996; Thomson and Whelan, 1997, p. 4-5).

Two other factors added to the un-tethered position of this study. First, I found no research literature specifically relating to the experience of teachers who supervise school safety patrol programs. Subsequently, the literature read prior to and during the design of the study focused on one component of their jobs: the research on children as pedestrians. The second factor that defied efforts to tie this study to one discipline occurred during data collection.

As the interviews progressed, it became apparent that teacher supervisors had already implemented some components of the enhanced school safety patrol program. Until data

analysis was principally, complete, it was not clear what literature was most relevant to findings. Strauss and Corbin's advice about the "interplay of reading the literature and doing analysis" (p. 55) suggested a search of the literature on risk management and that resolved the problem by revealing a similar story in Zenk and Leberman's (2001) study of outdoor educators.

Objectives of the Literature Review

Hart's (1998) ambitious objectives (pp. 14-25) for a literature review are addressed in this chapter. The section on library work, for example, addresses search activities and how the documents and information were managed throughout the study. The section on methodology literature includes a comparison of approaches that led to the choice of basic qualitative techniques for this study of teacher supervisors (p.15). Both the section on traffic safety and the section on risk management contain pertinent aspects of the development (ontology) of thinking and knowledge (epistemology) within these disciplines (Hart, p. 14; Gall, et al, 1996, p. 758).

The risk management literature identified for this study turned out to be especially useful for achieving Hart's objective of revealing the structure of relevant knowledge (1998, p. 14). That is, knowledge on risk is explicitly structured around risks associated with the environment, with equipment, and with people. This three-part structure in fact, offered a useful sequence for summarizing relevant developmental psychology and traffic safety education in this literature review.

Library Work

Initial search strategies may not reveal what you might have wanted; you therefore need to be flexible and search more widely...(Hart 1998, p. 19)

Traditional library work, that is, searching the indexes to literature, was, as predicted by Hart, initially unsuccessful. The Mission Possible document was very helpful, but the references focus on health promotion and social marketing and on drivers rather than

pedestrians, or pedestrian education or educators (1996). Coursework taken during the first phase of fieldwork demanded a review of methodology literature fieldwork. But, the absence of a clearly defined research problem at the time prevented appreciation of their significance.

The methodology literature reviewed early on did, however, offer some definitions that were helpful. For example, it can be said that the format of literature reviewed for this study includes technical literature or primary sources (reports written by researchers) and some non-technical sources (Strauss and Corbin, 1990, p. 48) such as provincial and national statistics and a poem on adult behavior in school intersections. More than half the literature cited in this review, in fact, is from secondary sources or summaries of relevant literature (e.g., Adams 1995; Brown 1998; Gillham and Thomson, 1996; Douglas and Wildavsky, 1982; Hamilton, 1992).

Electronic Bibliographies

A keyword search using the Go (Koch, 2000) eventually revealed two bibliographies that 'opened the book' on research about children as pedestrians. The first being the Early Childhood *Road Safety Education Program: Annotated Bibliography* (1996). And the second being *Child Development and the Aims of Road Safety Education* (2002) at University of Strathclyde in Scotland. Over the course of this study, I kept current with the literature by monitoring research websites (e.g., (U.S.) National Highway Traffic Safety Association (NHTSA), the Alberta Motor Association, Edmonton transportation and Streets, and Transport Canada). To organize this material I used the *favorites* function on the Internet Explorer browser. Then I monitored these websites to keep track of new research.

Browsing the Shelves

An even older library search method: browsing the shelves, surprisingly turned up Flurio and Stafford's *Safety Education* (1982) which contains chapters on school traffic safety education and the school patrol. Browsing in the Herbert T. Coutts Library shelves turned up

publications on risk management for schools (e.g., Minor and Minor, 1991) and *Safety Across the Curriculum* (Raymond, 1999) designed for elementary schools. Finally, I used inter-library loan to obtain *Pedestrian Safety Programs*, a report by Vallette and Vallete (1981).

Managing the Information

When it came to writing this thesis, I tried to make it easy to locate and review relevant sources. I began recording my document finds in fieldnotes and photocopying articles and texts that I couldn't afford. For each source, I summarized documents or books on recipe cards, highlighted key points in photocopied articles or texts and, once read, filed the photocopies in document/magazine holders. Eventually, my library consisted of seven categories: These categories include: methodology, community development, developmental psychology pertaining to children as road users, traffic safety education, programs, parents and child safety and statistics. Due to the gap between data gathering and writing my thesis, I had to continually update the statistics.

I have to credit Petit (1994), Thomson (1996) and Brown (1998) for helping me manage the review of literature. These researchers constructed historical overviews and summaries of research on child development, traffic safety education and risk management for outdoor education. These documents provided me with realistic starting points for understanding their respective disciplines and identifying literature most relevant to this study.

Methodology Literature

> *Methodological issues are not something to be marginalized or ignored, because any serious attempt to understand an aspect of the world is almost inevitably based on some dimension of the intellectual tradition of Western knowledge (Hart, 1998, p. 50).*

The following paragraphs address the objective of locating this study in the methodological tradition of qualitative research. The Mission Possible framework, from which this study evolved, espouses the need for community ownership. So naturally, literature on community development and exploration of community issues in traffic safety education was

sought. This section on methodology literature also includes a brief *comparison*, another of Hart's guidelines (p. 17), between community development, case study and action research. Yin's assertion that "the goal is to avoid gross misfits" (1994, p. 4) guided the review of various methodologies.

Community Development

> *The term 'community development' refers to 'a social process by which human beings can become more competent to live with and gain some control over local aspects of a frustrating and changing world' (Biddle and Biddle in Hamilton, 1992, p. 29)*

Most of the sources reviewed for this study would agree that traffic risks fit the above definition as local aspects of a frustrating and changing world. The origin of the school safety patrol program, for example, fits the above definition of community development. The Alberta Motor Association's early formation as a member-owned, service-oriented autoclub and Mission Possible represent examples of *bootstrapping*[5] (1992, p. 86) and "joint action among government, communities and the private sector" (Hamilton, 1992, p. 86). The patrol, teacher supervisors and their regional, provincial, national and international counterparts represent an existing secondary social network (p. 39) or critical mass (AMA, p. 16; Hamilton, p. 94). And Nebor (1984) asserts that community liaison role of teacher "is the backbone of the educational system" (p. 14).

The link between this study and community development is also evident, to some extent, in the work of developmental psychologists, who explored most aspects of children's developmental capacity as pedestrians. More recently researchers have narrowed their focus on community efforts to parents and schools (Thomson and Whelan, 1997; Murray, 1998). Thomson and Whelan's anecdotal results for adult volunteers delivering traffic safe education

[5] Bootstrapping is "a step-by-step approach to building a neighborhood or community organization" formed "as a result of a crisis or an organizer's initiative [which] provokes a few people" (Hamilton, p.72-73).

(p. 5) and this study of teacher supervisors both revealed elements of informal[6] education (Thomson and Whelan, p. 5; Hamilton, 1992, p. 72-73).

Group Pretest-Post-Test (Experimental Methodology)

Despite the similarities between the work of Thomson and Whelan (1997) and this study of teacher supervisors, this comparison did not shed light on methodological issues. Since 1991, Thomson, a developmental psychologist has collaborated with other researchers (Ampofo-Boateng, K.; Demetre, J.D.; Grieve, R.; Lee, D.N.; and Pitcairn, T.K) to explore traffic safety education for children since 1991. Thomson and Whelan (1997) focused on measurement of children's performance rather than on the experience of adults. They also used the tools they are most familiar with: quantitative methodology and large sample sizes. For example, they trained 100 adult volunteers (p. 12) to train 750 children, then did a post-test of 225 children (p. 5). The scope and resources of their studies were not feasible here.

Case Study

I ended up with six case studies, one for each research participant. The design of this study further resembles case study methodologies because it includes 7 of the 12 techniques for achieving validity and reliability as described in Gall et al.,. (1996, p. 572-574). These 7 strategies include

1. usefulness (to the patrol program, to teacher supervisors and traffic safety education).
2. contextual completeness (e.g., traffic volume data, environment, equipment, people),
3. Reporting style (e.g., "strong presence of the researcher's voice") (p. 580),
4. the 'story' of six teacher supervisors in the findings section,
5. use of poetry and diagrams,
6. triangulation (e.g., observation, intersection diagrams, traffic volume data), and
7. chain of evidence (link between data analysis and conclusions).

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[6]The terms 'community-based adult education' and "non-formal education' "...refer to any organized

The absence of long-term observation is the most significant difference between this study of teacher supervisors and case study methodology (Gall et al., 1996, p. 577).

Action Research

Some conventions of action research were useful during fieldwork and in writing this thesis. For example, Kemmis' table of invention (Kemmis and McTaggart, 1988, p. 91-99) served as a sort of benchmark from which to narrow the research problem. But, without an established group of stakeholders or an intervention as was the case with Elliot's exploration of reflective practice on three curriculum projects (1991), an action research approach was not appropriate. Nevertheless, the cyclic or phased approach of action research lent some structure to fieldwork and the Methodology (Chapter Three) portion of this thesis.

Final Design

> *Even though each strategy has its distinctive characteristics, there are large areas of overlap among them. (Yin, 1994, p. 4)*

Given Yin's advice about achieving a best fit in one's choice of methodology and his statement about overlaps, I felt comfortable enough to borrow from various approaches to qualitative research. From case study, I borrowed the objectives of achieving utility, contextual completeness, a strong presence of my own voice and story as a reporting style, the use of poetry and diagrams as data, triangulation and a clear chain of evidence between fieldwork, literature, methodology and findings. Of course some of these objectives are standards within qualitative methodology (Gall, et al., 1996; Hart, 1990, p. 19).

Action research offered some tethering techniques during fieldwork. It's cyclic format, for example effectively presented me with a project flowchart with which to organize gaining entry activities. Prior to discovering action research, fieldwork seemed somewhat chaotic. Kemmis' table of invention (Kemmis and McTaggart, 1988, p. 91-99) made it

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educational activity outside the formal system" (Coombs, 1973, in Hamilton, 1992, p. 26).

possible to capture the range of stakeholders that I contacted. Somehow using this type of table preserved or gave meaning to my fieldwork.

The final and explicit design for this study, consisted of qualitative interviews as described by Kvale (1996) and data analysis as described by Strauss and Corbin (1990). Zenk and Leberman (2001) in their study of outdoor educators and Etheridge, Hall and Etheridge (1995) used the same simple approach to documenting the experience of adults

Data Analysis

Two sources were used to learn and apply data analysis procedures. Bogden and Biklen's text *Qualitative Research for Education* (1992) served as useful orientation to data analysis. The generic family codes they offered were useful, but very inclusive (p.167-171). Gall et al., (1996, p. 117) and Strauss and Corbin (1990) were more helpful with describing open, axial and selective coding as well as developing a story line from results. Strauss and Corbin also anticipate the need to review new literature as the theme of risk emerged in data analysis.

> If we are effective in our analysis then new categories will emerge that Neither we, nor anyone else, had thought about previously....It is only after a category has emerged as pertinent that we might want to go back to the technical literature to determine if this category is there, and if so what other researchers have said about it...By choosing the right literature in tandem with doing analysis, one can learn much about the broader and narrower conditions that influence a phenomenon (Strauss and Corbin, 1990, p. 55-56.)

Together with using Bogden and Biklen (1992) and Strauss and Corbin, I used NVIVO qualitative data analysis software to set up coding trees resembling the *network notations* of Bliss, Monk and Ogborn, (1983, p. 9 - 11).

Risk

It wasn't easy to find sources of information on risk that furthered understanding of the experience reported by teacher supervisors. Using the ERIC database and the words *education* and *risk*, I found literature on risk within the physical science disciplines. It was

also easy to find educational research on children at risk (e.g., from drugs or abuse) and research dealing with the risk of student violence at school in ERIC, which is an index to educational databases. But neither of these approaches to risk really addressed the predicament of teacher supervisors or helped me as a novice to understand what the general principles of risk are.

Then I searched ERIC for *educators* and *risk*. This search identified research literature pertaining to outdoor education. Among this literature Zenk and Leberman's (2001) investigation of 12 outdoor educators closely resembled the interface between teacher supervisors, patrollers and traffic. From their list of references, I found Brown (1998), Liddle (1998) and useful secondary sources: Adams (1995) and Douglas and Wildavsky (1982). Zenk and Leberman (2001), Brown (1998) and Liddle (1998) served three purposes. These sources defined risk in various ways, described what is known about traditional risk management and explained how it has been studied and applied in the outdoor education industry. In essence these authors revealed what Hart refers to as the structure of knowledge in a discipline (1998, p. 14). This literature also introduced me to a debate on objective versus subjective approaches to risk.

Defining Risk

Brown (1998) defines risk as "the potential to lose something of value, or a potential accident" (p. 74). Trimpop (1994) broadens this definition of risk as "conscious or non-conscious behavior with a perceived uncertainty about its outcome, and/or about its possible benefits or costs for the physical, economic or psychosocial well being of oneself or others" (In Zenk and Leberman, 2001, p. 52). Rayner defines risk as "a series of complex interactions and relationships between people as well as between people and nature" (In Zenk and Leberman, 2001, p. 74). Zenk and Leberman state that risks are segmented into three categories: risks associated with environments, with equipment and with people (p. 51).

These definitions clearly apply to risks posed by traffic. In fact, Adams (1995) uses examples of traffic related risks throughout his text.

Complexity

It seems...unarguable that an analysis of qualitative data which does not capture ...complexity, subtlety and detail loses much of what the data offers. (Bliss et al., 1987, p. 3)

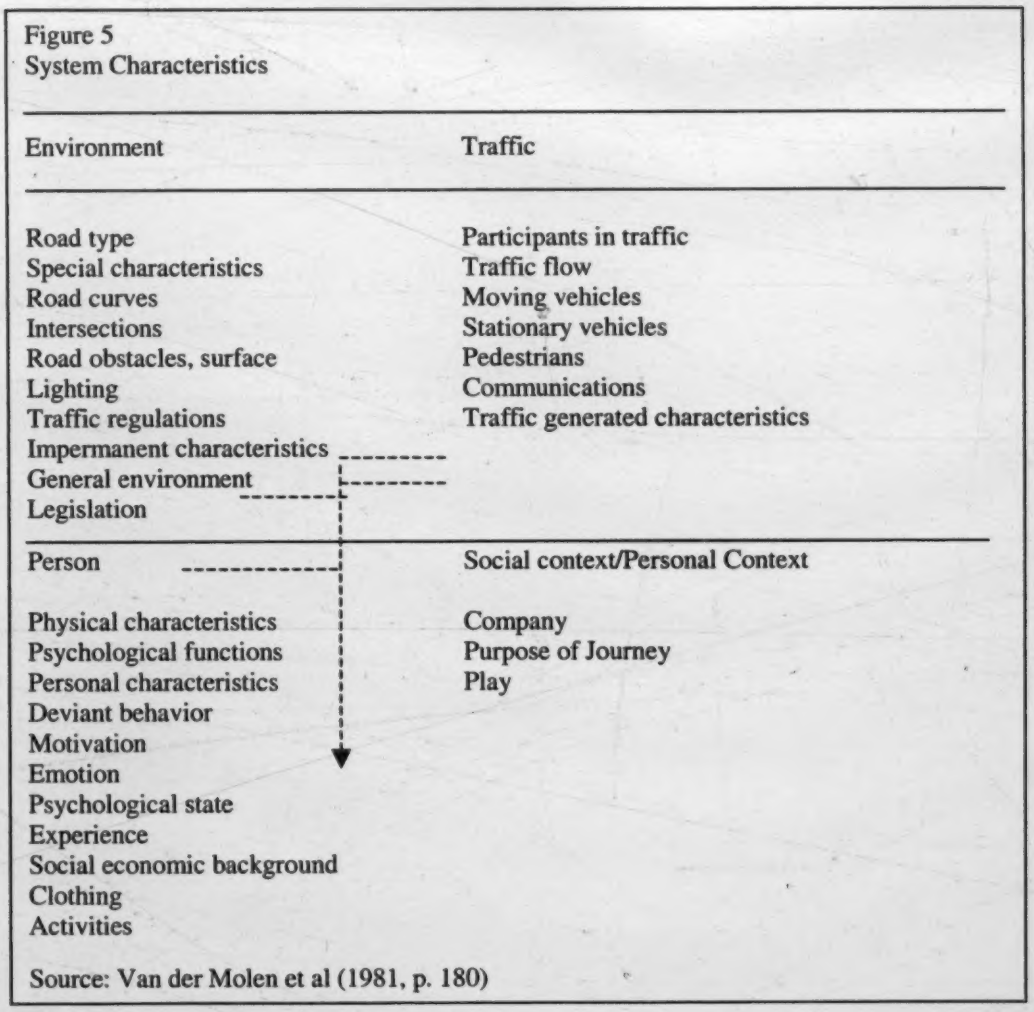
The complexity of risk is apparent in traffic safety literature that focuses on system models. Complexity is an issue in this study because, as stated in Mission Possible "designers of traffic safety interventions must be very aware of the systemic nature of the problem and the complex interactivity of all the elements in the system" (1996, p. 334). For example, Van der Molen, Rothengatter and Vinje (1981) identify 32 traffic-related components in a diagram of "System Characteristics" (p.180). (See Figure 5 on page 33). Complexity is also apparent in the 52 factors influencing motorist behavior proposed by Lonero (In AMA, 1996 p. 35). (See Figure 6, on page 34). The AMA's Mission Possible document also places considerable emphasis on the systems nature of traffic (1996, p. 19, 20, 24).

The relevance of Vander Molen et al., and Lonero's models is apparent in the close match between their components, the risk factors mentioned by teacher supervisors and the three categories of risk identified by Zenk and Leberman (p. 51). Zenk and Leberman offer a caveat to the legitimacy of strong distinctions between risks associated with environment, equipment and people. They state that "A normative view of risk, where risk is segmented into risks in the natural environment and those related to equipment...further disentangling [sic] risk from human biases" (p. 51). My interpretation of this statement is that factors such as *legislation*, which Van der Molen classifies as environmental (Figure 5, p. 33), does not really exist separately from the human values that created it. Nor is legislation distinct from how people comply with the law or enforce it. I have used broken lines and arrowheads to indicate

factors from Van der Molen's model (Figure 5, p. 33) that could easily fit into other categories.

Having introduced the idea that traffic is complex, the following paragraphs explore three categories of traffic risks: environmental risks, risks associated with equipment and risks associated with people. Despite the limitations of segmenting categories of risk, these classifications aided the organization and summary of literature relevant to risks that emerged in study data. For purposes of brevity, only a few dimensions of risk within each of the three major categories are presented in the following paragraphs.

Figure 5
System Characteristics



Source: Van der Molen et al (1981, p. 180)

Risks Associated With Environment

Magnitude

The occurrence of the word *busy* in all six interview transcripts compelled me to locate and assemble City of Edmonton traffic volume data shown in Table 2, p. 36. I determined the school populations during research interviews, and used the simple formula shown to calculate the minimum number of pedestrian crossings at each school on a daily and annual basis. To verify this data, I had City personnel review it (A. Jones, Personal Communication, August 7, 2001). The numbers provided seem a little more credible when one considers there are 7300 cars *just parked* in University of Alberta parking lots each weekday (Kevin Campbell, personal communication, February 6, 2003). (This number does not include metered parking or the University of Alberta Hospital lot.)

Figure 6
Factors Influencing Road User Behavior

Value of Future Time	Risk acceptance	Enforcement
Traffic Congestion	Frustration/Aggression	Legislation
Psycho-pathology	Deterrent Threat	Distractions
Publicity/News	Attention/alertness	Fatigue
Training	Knowledge	Impairment
Public/Formal Education	Feedback	Conflicting tasks
Boredom	Stimulus Needs	Other drivers
Thrill Seeking	Skills	Passengers
Pleasure	Social norms	Near misses/conflicts
Observed models	Habits	Information processing
Peer Pressure	Driving Culture	Basic human limits
Family Pressures	Values	Vehicle handling
Community Standards		Motor control
Moral Development		Economic cycle
Duty of Care		Value of present time
Intra-personal Development		Trip purpose
Experience		Mobility/growth

Limitations of Data Sets

In Mission Possible, the AMA states "The collection of data critical to a better understanding of collisions is very limited. The data sets collected are often incompatible with those from other jurisdictions and plagued with inaccuracies" (p. 9). More specifically, "Information from Alberta Transportation and Utilities (AT and U) suggest that missing data was a factor in as many as 10 percent of casualty collisions in the province..." (AMA, 1996, p. 24). Police are required to indicate the cause, but reports made in person are not. Hence,

> Over 10 percent of the collision report forms filled out in 1993, did not specify the sex of the driver involved and more than eight percent did not list a date of birth....[Furthermore,] self-reported information does not accurately reflect the true cause of collisions due to the tendency of individuals involved to place events in the best light for themselves (AMA, 1996, p. 29).

On the positive side of the data issue, Health Canada has initiated a surveillance program in an attempt to garner support for sharing data (Health Canada, April 2002, p. 2-3). There is agreement in the literature that data on traffic *fatalities* is the most reliable (AMA p. 29; Adams, 1995, p. 136).

Incident Reporting

As the above reference to incomplete traffic incident reports suggests, it appears that there is room for improvement when it comes to the reporting skills of enforcement personnel. Referring to government's affinity for statistics, Adams quotes: "you must never forget that every one of these figures comes in the first instance from the village watchman who puts down what he damn pleases" (1995, p. 73). This quote is from a third party, and so might appear dubious.

Table 2
Summary of Pedestrian and Vehicle Traffic Volume
Schools 1 -6

	K-6 Other	School Pop.	Minimum elementary student crossings (2) per day x 181 per year	Vehicles Traffic Volume* Per day/ per year	Patrollers	X-walks Patrolled
Fran School 1	K-6 & Daycare	209	418/75,658	4000 / 72 400	25	2
Dorothy School 2	K-6	221	542/97 500	1900/ 343 900	25	1
Katherine School 3	K-6	206	412/72 000	2900 / 524 900	25-30	1
Charles School 4	K-6	320	640/115 840	6700/ 1 212 700	22	2
Helen School 5	K-6	210	420/74 160	5500 / 1 086 000	22	2
Ann School 6	k-9	160	320/57 600	3500 / 633 500	8	2
Totals		1326	2752 / 492 758	24 300 / 3 873 400	127	10

Source: City of Edmonton Traffic Volume Statistics 2000

Magnitude Of Traffic Related Losses

Keeping the limitations of data sets in mind, Tables 3 to 5 below aim to provide comparative statistics on injuries, fatalities and property damage from three levels of government: municipal, provincial and federal. In 2001, 24 Edmontonians and 341 Albertans died in collisions. The national figures for 2001 are 2,778 deaths and 221,158 injuries.

Near Misses

The issue of near misses is relevant to this study of teacher supervisors for several reasons. It came up without prompting in research interviews, and patrollers are currently required to report dangerous incidents to their teacher supervisors.

Table 3:
Edmonton Traffic Collisions 1997-2001
Source: city of Edmonton, Motor Vehicle Collisions 2001, p.2

Severity	1997	1998	1999	2000	2001
Fatal	17	24	11	19	24
Non Non-Fatal Injury	8,319	8,756	9,173	9,805	10,284
Property*	9372	10,348	9898	11168	10692
Total Reportable Collisions	17,648	19,128	19,082	20,992	21,000

*Property loss collision statistics were not available, so they are calculated here by subtracting fatal and non-fatal injury collisions from total reportable collisions.

Table 4
Alberta Traffic Collisions 1997-2001
Source: Alberta Transportation and Streets, 8/27/2002, p.18

Severity	1997	1998	1999	2000	2001
Fatal	357	358	305	312	341
Non Non-Fatal Injury	16,231	16, 987	17,398	18,246	19, 000
Property*	75,777	81,256	77,543	85,905	88, 050
Total Reportable Collisions	92,365	98,601	95, 246	104,463	107, 391

From a risk perspective, Lonero includes near misses/conflicts as factors influencing driver behavior (AMA p. 35). And Brown (1998) states: "the Accident Ratio Triangle theory …suggests that for every major injury there would typically be ten minor injuries and up to 600 near misses" (p.77-78). Adams (1995) disagrees about the value of data on near misses.

Table 5:
Canada Road Casualty Collisions 1997-2001
Source: Transport Canada 2001, p. 18

Severity	1997	1998	1999	2000	2001
Fatal	3,063	2.934	2,969	3,082	2778
Non-Fatal Injury	221,349	217,754	222,275	227,500	221 158
Total	224,412	220688	225,244	230,582	223936

"For all non-fatal measures of risk there is further intractable measurement problem variously labeled shame, guilt responsibility, liability stupidity, or the Hawthorne effect. Accidents are usually followed by an inquiry into who was to blame. There is a natural tendency for those who feel responsible to cover up (p. 90).

The AMA agrees with this view: "The need to determine fault…often leads to simplistic thinking about the causes of collisions" (1996, p. 24). From the perspective of research on traffic safety education, Gillham and Thomson write "Without knowledge of 'near misses' or the safety strategies that parents routinely adopt to protect their children, we may well see a distorted picture of what the problem is and how to solve it" (1996, p.2).

Location of Risks

Certainly the location of collisions and traffic-related injuries qualifies as an environmental risk factor. Statistics on emergency room visits among children and youths are shown in Table 6. From this particular data, it appears that elementary school children (age 5-14) visit emergency rooms for injuries more often than younger or older children do. Table 6 offers one view of the location of children's injures Canada wide in 1997. Year 2000 figures on location of major trauma for children and teens in Alberta, however, locate more incidents in streets (172) than in seven other venues added together (167) (Alberta Health, 2002 p.16).

Table 6
Emergency department visits activity and location at time of injury
Canada 1997
Source: Adapted from Health Canada (1998, p. 250)

Age Range	Total Emergency Room Visits		Activity at time of Injury			Location at time of Injury		
			Transportation		Sports/ Leisure	Home	Schools	Sport Facilities
	#	%	%	(#)	%	%	%	%
Total	95,908	100	8	(7672)	57	44	19	13
Age								
<1	4,091	4	6	(5754)	24	81	1	1
1-4	28,133	29	3	(843)	55	73	5	5
5-9	24,159	25	10	(2451)	62	42	22	13
10-14	27,883	29	10	(2788)	63	23	30	20
15-19	11,642	12	9	(1047)	53	19	23	21

Time

The Family day Long Weekend recorded the highest number of individuals killed. The Labour Day Long Weekend recorded the highest number of injuries. The five-day Christmas season recorded the highest number of collisions (Alberta Transportation 2002, p. 12)

The validity of time as an environmental risk factor is evident in research participant reports that they change their tactics at different times in the day and month of the year. In monitoring traffic, the City of Edmonton measures traffic volume in four time periods. These are: AM Peak Hours, AM Off Peak Hours, PM Peak Hours and PM Off-Peak hours. The monitoring reports include the date. Hence it is possible to determine the level of risk from traffic volume during specific time periods. Information on weather conditions affecting road surfaces is included in collision reports (Transportation and Streets, 1998). Alberta Health

states that major trauma among children and teens occur after 12:00 noon and the rate of injuries gradually increase from the lowest number occurring Mondays to the highest occurring on Saturdays (p. 16).

A number of other sources mention time as a factor in traffic environments. Van der Molen et al.,'s traffic system characteristics, for example, (Figure 5, p. 34) include *lighting* and *road surface*, which are the result of time of day and seasonal weather. Vallette suggests the change of seasons is also a risk factor for school patrollers. "Whether the emphasis is on the paid adult crossing guard or the student safety patrol...these guards can get very discouraged when the cold and snow arrive" (Vallette, 1981, p. 91-92).

Economic Risks

Traffic risks also have economic dimensions. Hence, economic risk can be defined as

> a numerical measure of the expected harm or loss associated with an adverse event... is generally the integrated product of risk and harm and is often expressed in terms such as costs, loss in expected years of life or productivity, and is needed for numerical exercises such as cost-benefit analysis or risk-benefit analysis (Adams, 1995, p. 8).

Such economic measures have been applied to the vehicle collisions. "A conservative figure estimates a fatal collision to have a societal cost of $2.9 million. In total, MCVs (Motor Vehicle Collisions) cost Albertans $3.5 billion every year (Capital Health, in AMA, 1996, p. 23)."

> Albertans share in this cost. Auto insurance costs per claim have increased 230 percent since 1990, and are certain to increase more rapidly given the culture of American-style litigation which has recently taken root in our province. Similarly, health care premiums have increased 72 percent since 1990, and are projected to increase another 50 percent by 1998. This increase does not reflect the proliferation of user fees for health services which have been implemented since 1993" (AMA, 1996, p.14). Because of the prevalence of head and spinal cord injuries, motor vehicle collisions produce an average of 30 new cases of para-and quadriplegia annually. Each can cost five to six million dollars over a lifetime, depending upon the age of the victim" (AMA, p. 23).

Finally, Lonero's factors influencing motorist behavior include 'economic cycle' (In AMA, p. 35).

Risks Associated with Equipment

Municipal records contain information on street furniture such as lights, stop signs, painted crosswalks, bus stops, shelters, benches and newspaper vending machines (City of Edmonton, Transportation Planning Branch, 1994). Guidelines for organizations like schools to request an intersection inspection/traffic count also exist (1994, p.11-14). Clothing and footwear appear as risk factors in models created by Brown (1998, p. 75) and Van der Molen et al., (1981, p. 180).

Risks Associated with People

> *The road user, the most important factor in the system, remains the most difficult to influence.....Existing research suggests that modifying road user behavior can best be achieved by changing the social norms related to traffic safety –(AMA, 1996, p. 23)*

This section on traffic risks associated with people presents some highlights of current knowledge on human behavior in traffic. Having dealt with motorists under the heading of risks associated with equipment, this section deals with the literature on children as pedestrians and parents attitudes and roles pertaining to children's and traffic safety. Literature on the nature of emotional risk is also presented in this section. Although what literature there is on teacher supervisors would logically fit under the heading of risks associated with people, I've chosen to summarize that literature in the section on education as risk management.

Motorists

As noted previously, segmenting risk into environmental, equipment and human factors is artificial. It is also beyond the scope of this study to explore the literature on risks associated with the engineering and construction of vehicles. Using the data collected for this study as a guideline, however, it is within scope to review some literature exploring research participant's observations about how motorists use motor vehicles as equipment.

As it happens, the risks in terms of motor vehicle use that research participants' observed are well documented (see Table 7, p. 42) as driver errors that most frequently cause injuries and deaths. When updating the year 2000 version of this table, I noticed that the

number of drivers who were involved in fatal collisions as a result of following [another car] too close or failing to yield right of way to [a] pedestrian doubled in 2001. Also in 2001, the

Table 7
Driving Errors Causing Injury or Death
Source: Alberta Transportation 2002, p. 2

Improper Actions	Drivers in *Fatal Collisions*		Drivers in *non-Fatal Collisions*		Total Drivers *in Casualty* Collisions	
	N	%	N	%	N	%
Followed too Closely	8	2.9	3830	8.0	3838	7.9
Ran off Road	122	44.5	1759	13.1	1881	13.7
Left Turn Across Path	16	5.8	1667	12.4	1683	12.2
Stop Sign Violation	35	12.8	1136	8.4	1171	8.5
Disobey Traffic Signal	10	3.6	1081	8.0	1091	8.2
Left of Center	40	14.6	315	2.3	355	2.6
Fail to Yield Right of Way to Pedestrian	10	3.6	387	2.9	397	2.9
Improper lane Change	3	1.1	375	2.8	378	2.7
Backed Up Un-safely			352	2.6	339	2.6
Improper Turn	1	0.4	292	2.2	293	2.1
Fail to Yield Right of Way Uncontrolled Intersection	6	2.2	305	2.3	311	2.3
Yield Sign Violation	1	.4	297	2.2	299	2.2
Improper Passing	5	1.8	119	0.9	124	1.2
Other	16	5.8	1563	11.6	1579	11.5
Total Drivers	274	100.0	13478	100.0	13752	100

number of drivers in fatal collisions increased by 35 and the number of drivers in injury collisions increased by 500 (Alberta Transportation, 2002, p. 20).

Children

Despite substantial decreases in injury-related deaths over the last 20 years, more Canadian children continue to die from unintentional injuries than all other childhood diseases combined. In 1990, unintentional injuries accounted for more than 60% of all deaths of children and youths from ages 1-19. (Health Canada, 2002, p. 1)

Petit's summary and bibliography of research *Children's Competence as Road Users* (1994) catalogues the body of knowledge published on this topic prior to 1994. It includes 571 articles and a glossary of 75 terms pertaining to developmental research on child pedestrians. As mentioned in the introduction, the depth and breadth of research on children and traffic is based on the work of Piaget and Vygotsky (Thomson, Tolmie, Foot, and Mclaren, 1996, p. 4-5). Hence, much of the work contained in Petit's bibliography has been conducted by developmental psychologists. The blueprint of 26 pedestrian tasks developed by Van der Molen, Rothengatter and Vinje (1981) and Vinje (1981) correlate children's developmental abilities with the pedestrian skills needed to cross streets safely. From there, other developmental psychologists were able to test ways and means and limitations of training children to behave more safely in traffic. Interestingly, current knowledge on pedestrian education suggests that only when children reach the age of school safety patrollers can generally demonstrate street crossing skills that approximate adult decision making.

Children's Capacity as Pedestrians

The specific risks that traffic poses for children are related to their developmental abilities. The following points elaborate on Vinje's (1998) findings about realistic expectations for children up to 11 years old (Patrollers are 11-12 years of age).

- Up to age six we cannot expect children to always be able to come to a sudden stop when running.
- 8 year olds cannot differentiate between cause and effect,

- Only when they are 9 do they know difference between left and right in relation to their own bodies,
- 10 year olds know the purpose of rules,
- Large differences between individuals in height and intellectual development are characteristic of children between 6 and 11,
- Height and restricted visual field as well as longer time needed to react to objects detected by peripheral field without turning their heads,
- Visual field bound by incidental, new, surprising objects, linked by emotion and conspicuous parts of the situation rather than older ones,
- Ignoring of irrelevant for a gain in relevant information, is only found in children of about 11 years.

(1981, p. 228-235)

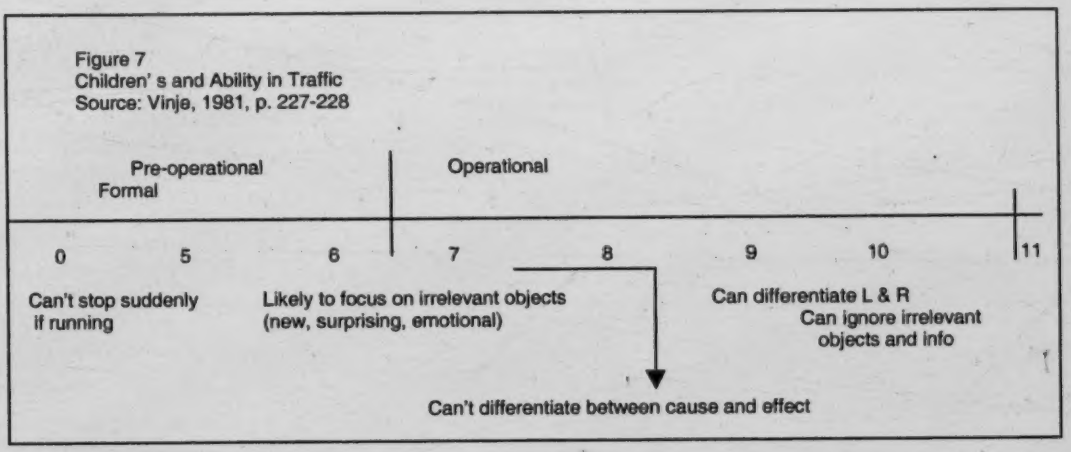


Figure 7
Children' s and Ability in Traffic
Source: Vinje, 1981, p. 227-228

Thomson (1996b) states that "the figures substantially underestimate pedestrian's vulnerability [risk] because they do not take the exposure…into mind….one group of road users may actually have fewer accidents than another but, when exposure is taken into account, turn out to be more vulnerable. The (U.K.) Department of Transport estimates that becoming a pedestrian casualty is no less than 15 times higher than when travelling by car" (1996, p. 70-71).

Table 8
Age of Pedestrian Casualties 2001
Source: Alberta Traffic Collision Statistics 2001

	Killed	Injured	Total Casualties	%	Casualty Rate per 10,000 population
Age					
Under 5	1	19	20	1.6	1.0
5-9	1	60	61	4.8	2.9
10-14	2	149	151	11.8	6.8
15-19	2	169	171	13.3	7.7
20-24	3	151	154	12.0	6.9
25-29	1	108	109	8.5	4.8
30-34	2	87	89	6.9	3.8
35-44	7	181	188	14.7	3.5
45-54	4	127	131	10.2	3.2
55-64	4	70	74	5.8	3.2
65 +	6	117	123	9.6	4.1
Total	33	1249	1282	100%	

Parents

Many parents and other adults, such as teachers, do not fully realize what can be expected of children in traffic situations and therefore how much information children can absorb about traffic safety. (Arena and Bachar, 1978, p. 124).

The highlights of literature presented in the following paragraphs is focused more on what is known about parents' roles and attitudes in educating their children about safety. Relevant issues include optimism bias, failure to remediate risky behavior, poor role modeling, socio-economic factors, and vague instructions. "…you're told….when you have a

baby, and all this equipment you should have, and it can end up [with you thinking], 'I'm no' bringing my child up properly...and it just ads to other stresses you've got'" (Roberts, In Gillham and Thomson, 1996, p. 59).

Optimism Bias

Optimism bias used here refers to parents' resistance to "accepting that their child is personally vulnerable to injury" (Health Canada, 1996, p. 2). This factor may explain differences in awareness and action in parental attitudes and practices toward children as pedestrians.

> Although 94% of parents did not believe that 5- to 6- year-old children can reliably cross streets alone, one third of parents *allowed* kindergarten-aged children to walk alone to school. The presence of speeding traffic or a lack of safe places to walk did not influence parents in limiting their children's crossings. Few (17%) parents believed that children should be taught not to cross alone; one half of parents, including 41% of parents of kindergarten aged children thought should be taught to cross busy streets *without traffic lights* (Rivera, Bergman and Drake, 1989, p. 1017).

This sense of optimism may be the result of parents belief that because their children engaged in risky behavior many times in the past without being injured, there was little likelihood of injury in future (Health Canada, 1996, p. 11).

Failure to Remediate Unsafe Behavior

Gillham and Thomson (1996) point to lack of remediation of risky behavior as a contextual factor (p. 2). This is an issue, because occurrences of risky behavior are (near misses are critical learning opportunities (Gillham and Thomson, 1996, p. 2; Health Canada, 1996, p. 11), Peterson et al.,. had similar results in a two-year study of 66 mothers and 8 year-olds. Reasons for "low occurrence of remediative action following children's injuries [might be] parents' judgements concerning what constitutes safe behavior...and using rules that ran counter to recommendations of some safety experts" (p. 233).

Poor Role Modeling

Arena and Bachar, (1978) state what it took decades of traffic safety research to discover. That is, "Regard for safety grows out of deep seated values and concerns....when

your child sees you drive, play, swim, walk. He will soon compare what you say with what you do" (p.10). Indeed, a Health Canada study (1996) concludes "Parent's....failed to realize the potential of their own risk-taking influence on the behavior and/or attitudes of their young children " (p.14)

Vague Instructions

Another area of agreement in the health and traffic safety literature is that the directions parents give does not show an understanding of how children learn. "Verbal instructions can be hazardous when used in isolation....This information may increase children's knowledge, but...advice ...outside the context in which the behavior takes place is unlikely to succeed" (Roberts in Gillham and Thomson, 1996, p. 57). "*Looking* for traffic...implies a wide range of judgements that are so self-evident to experienced pedestrians that they fail to make explicit when talking to a child" (Thomson, in Gillham and Thomson, 1996, p. 87).

Socio-economic Factors

Both health and traffic safety research suggests that socio-economic level combined with an unstable home life has an impact on parental responses to injury prevention (Peterson et al., 1995; Health Canada; 1995; Gillham and Thomson, 1996). Wildavsky and Douglas state "poorer people on average are sicker than rich, die earlier and have more accidents" (1982, p. 19). Murray (1998) found a correlation between young driver involvement in collisions, low performance in school and homes with single parents or parents with low education levels who are unemployed or employed in semi-skilled, unskilled jobs. The same sources suggest that more research is needed to understand the relationship between socio-economic level and risk.

Emotional Risk

A definition of emotional risk is warranted because the teacher supervisors interviewed in this study expressed concern about the impact of an injury or fatality not only

on the victim and his or her loved ones, but on patrollers. Brown (1998) and Milne (1993) provide definitions of emotional risk relevant to those teacher supervisors identified. "Emotional safety is compromised by a person's psychological response to witnessing or confronting an accident. This produces 'critical incident stress' which can overwhelm the capacities of a person to cope with an incident (Tasmanian Outdoor Leadership, 1996, in Brown, p. 77). This risk issue relates to "the grief reaction that typically results from encountering a seriously or fatally injured person" (Wilkerson, 1985, in Brown, p. 77).

Milne (1993) offers a graphic example of emotional risks associated with a traffic fatality.

> I know what a fatal accident to a child brings to the family. I ...picked my three-year old nephew off the road dead under the wheels of a bus and had to tell his father 10 miles away what had happened. I accompanied my brother to see and comfort the bus driver who was in tears, and to the mortuary to identify the body. The child had lived in my parents' house and the death of the boy undoubtedly contributed to the death of my father a year later (Milne, M. In Hillman, Ed., 1993,p. 1).

Brown suggests that casualties involving children are among the most likely to draw emotional responses such as public outrage (1998, p. 74). He also lists emotional risk as an area requiring further research (p. 72).

Risk Management

Having summarized some of the relevant literature on the traffic risks that research participants described in their interviews, the literature on risk management summarized here provides some insights into how research participants *manage* risks.

Limitations

I have limited this section to literature on risk management in the field of outdoor education for several reasons. First, as mentioned on pages 24-25, it was difficult to find literature on risk that is relevant to the predicament of teacher supervisors. The reason for this is that "most of the published research on risk and risk management has been conducted in the

areas of financial, business and health risk" (Brown, 1998, p. 71). Naturally, I was eager to explore what literature exists within the general definition of education.

My second reason for limiting the literature reviewed to that of outdoor education is the realization that the purpose and predicament of teacher supervisors and outdoor educators have similarities. They teach students outdoors in a manner that optimizes learning in environments where real threats to physical and psychological safety occur. And both have to comply with politics or policy in the form of professional standards, ethics, relationships and employer liability issues (Zenk and Leberman, 2001; ATA, 1999).

Key Contributors

Throughout this section on risk management I refer most often to four sources: two articles and two texts. Brown, a lecturer in the School of Leisure Studies at Griffith University in Queensland , serves as a benchmark for the other three. His article reflects mainstream or *formal/objective sector* assumptions and risk management practices. In my opinion, his is a view less conservative and technical than one would expect from the banking industry or the physical sciences.

Zenk and Leberman, also based in Australia, question all of Brown's mainstream assumptions, view all risk as a *social construction* and favour the risk management practices of lay people or the *informal/subjective sector*. In so doing, Zenk and Leberman, illuminated the mainstream view of risk for me. The two other sources, Adams (1995) and Douglas and Wildavsky (1982), quoted in this section of the literature review, were cited by Zenk and Lemberman (2001). Both are summaries of literature on risk (Strauss and Corbin, 1990, p. 48). And they illuminated, for me, Zenk and Leberman's argument that risk is a social construction.

Definitions of Risk Management

Brown defines risk management as "the process of reducing potential loss to an acceptable level" (1998, p.74). He is also quoted as offering a more specific definition of risk

management as the "systematic application of management policies, standards and procedures to the tasks of identifying, analyzing, assessing, treating and monitoring risk" (In Zenk and Leberman, 2001, p.52). A simple, hybrid protocol for risk management might look like this:

1. risk identification (hazard assessment),
2. risk evaluation (frequency, severity),
3. risk adjustment or control (options to retain, reduce, transfer, or avoid risk),
4. risk management plan [choices],
5. plan evaluation and update [monitoring].

(Brown, p. 79)

Rayner (1987) asserts that risk management should incorporate common-sense decisions based on reasoned judgement and include consideration of social issues like trust and equity..." (In Brown 1998, p. 74). Zenk and Leberman (2001), Adams (1995) and Douglas and Wildavsky (1982) propose that risk management is a matter of values, experience and judgement.

Theories of Risk

The literature reviewed for this study revealed a debate between formal/objective and informal/subjective thinking about risk. Both schools of thought have their own assumptions. The debate[7] between proponents of formal/objective and informal/ subjective approaches to risk is critical to the experience of research participants and the credibility of traffic safety education as a risk management strategy. The formal objective view would classify teacher supervisors as members of the informal sector, and therefore not qualified to identify and measure real risks. The patrol and other traffic safety education efforts, run by members of the informal sector who cannot discern between real risks and perceived risk, would therefore not be considered a real risk management strategy.

Formal or Objective Assumptions

The objective approach to thinking about and studying risk resembles the positivist view of research. The positivist view assumes that "physical and social reality is independent of those who observe it, and that observations of this reality, if unbiased, constitute scientific knowledge" (Gall, et al., 1996, p. 766). A finer definition of *objective* is common enough to be found in Webster dictionary. That is, "expressing or dealing with facts or conditions as perceived without distortion by personal feelings, prejudices or interpretations...[or] a test limited to choices of fixed alternatives reducing subjective factors" (1989, p. 814).

Formal/Objective Tools

One example of an objective tool is a simple mathematical formula: "Risk...equates the probability of occurrence with the magnitude of its consequences (Risk = Probability x magnitude) Brown's model shown below in Figure 10 on page 62 is more complicated. It contains environmental, equipment and people related risk factors and promises to yield a four-point rating of risk exposure: extreme, high, moderate and low. As Brown explains, "any additional factors in a situation naturally have to be added in to the equation" (Brown, 1998, p. 74). He states that "the number of factors present in each risk group are likely to have a multiplier effect on risk exposure than an additive one" (p. 75) and that the results of using this model should "constitute the basis of a risk management" (p. 76).

Other examples of objective risk assessment tools have been developed by Loggins, Edmonton Transportation and Streets, (1994), and the National Highway Traffic Safety Association's (NHTSA, 1997). Loggins (1989) outlines a very complex formula or hazard index to assess the need for paid adult crossing guards. "The...formula accounts for the traffic volume, street width, traffic speed, sight distance, stopping distance and the number and age of children" (p. 45-47). Edmonton Transportation's Pedestrian Warrant Index (PW1) is a

ranking system for evaluating the need for 'crossing protection' (e.g. crosswalks, walk lights) (1994, p. 10). The NHTSA *Walkability Checklist,* with a rating scale of 1-6 for five categories of risk, is designed for use by adults and elementary school children, (1997, p. 1-4). All four models contain categories that roughly include risks associated with environment, equipment and people. Figures 8 and 9 demonstrate the relevance of the Adventure Risk Exposure model to the school safety patrol program and by extension the CLP. Note the importance that both Brown's model and the patrol place on pre-activity advice.

An informal or subjective approach to thinking and studying risk resembles the post-positivist doctrine "that social reality is a construction, and that it is constructed differently by different individuals" (Gall, et al., 1996, p. 766). Another assumption shared by the informal/subjective approach to risk and post-positivism is the assumption that "knowledge is always impartial and incomplete, always produced from a particular perspective" (Nash in Zenk and Leberman, 2001, p. 51). Whereas the formal sector relies on statistical and experts (Adams, 1995, p. 4), proponents of an informal/subjective view of risk rely on the perspective and experience of non-expert individuals facing risky situations. Proponents of the informal/subjective view look for the social causes of a phenomenon (e.g., risk) within the perceptions of individuals. The concept of risk as a social construction becomes clearer in the following paragraphs focusing on the comparative practicality of informal risk management, the influence of gender, of age and of values.

Practicality

An advantage of an informal/ subjective view of risk, in my opinion, is its portability and accessibility when compared to the statistical tools of the formal sector.

> Most commonly, the objective sector is mystified and frustrated. How… with all the road improvements, vehicle safety regulations, speed limits alcohol limits, warning notices, inspection procedures and fail-safe devices, do so many people continue to have accidents? …A significant part of the explanation appears to lie in the objective sector's division of labor. Risk-management at an individual level involves no division of labor; the balancing calculations that precede a risky act are all done in the head of

Figure 8
Adventure Risk Exposure Model
(Brown, p. 75)

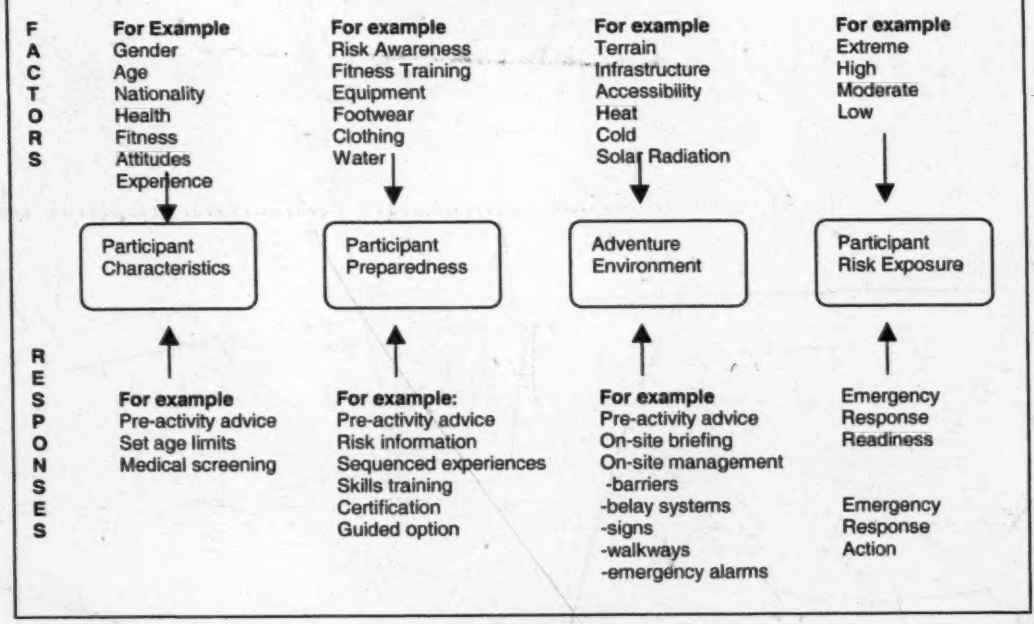
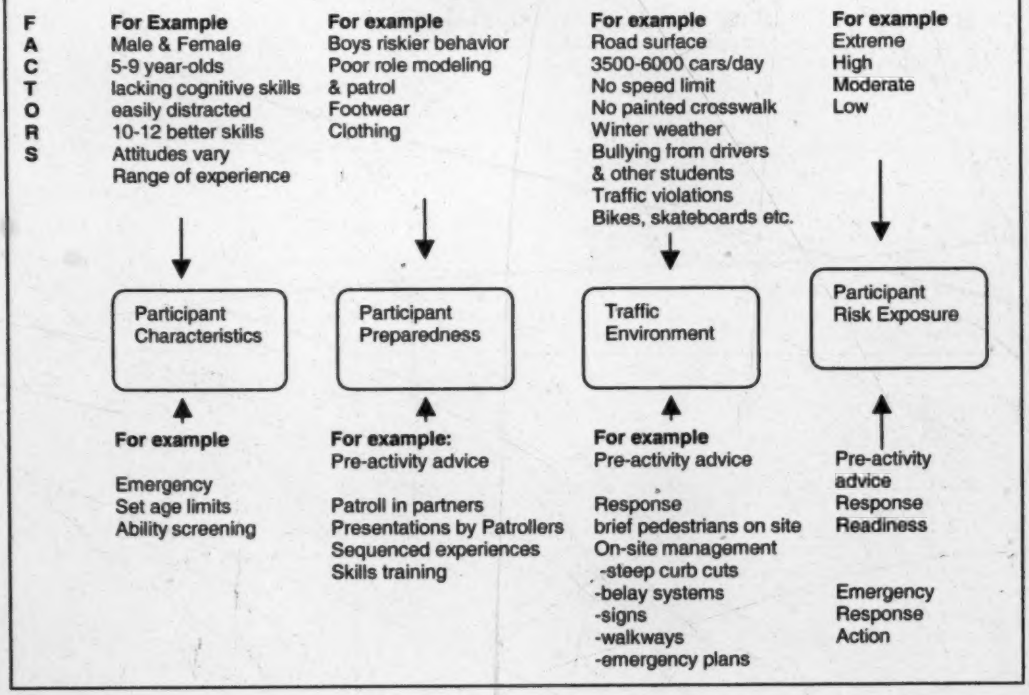


Figure 9
Traffic Risk Exposure Model
(Adapted from Brown, p. 75)



> the individual. But when institutions assume responsibility for risk management it is difficult to know where the balancing act is done—(Adams, 1995, p. 5)

Among the portable risk management tools of the average person there are many influences. Lonero, for example, identified 52 factors influencing motorist behavior. For this review of literature on subjective assumptions of risk, I've limited the number of informal sector tools to the influences of gender and race, age and values.

Gender

Zenk and Leberman, proponents of subjective thought on risk, cite academic research which supports what is likely a common, lay observation. "Different groups in society perceive risks differently ...women and men express different levels of concern about the same risks, [and attribute different] meanings to the same...white males on average perceive risk to be much smaller and much more acceptable than other people" (2001, p. 51). Petit (1994) reports that this tendency persists from childhood "what studies there have been bear out the widely held belief that boys are more likely than girls to take risks...but much more research is needed in order to clarify the factors involved" (p. xii).

Age

Adams illustrates how social factors, in this example age, affect the definition of risk.

> Slipping and sliding on ice, is a game for young children, but a potentially fatal accident for an old person. And the probability of such an event is influenced both by the person's perception of the probability, and by whether they see it as fun or dangerous....because old people see the risk of slipping on an icy road to be high, they take avoiding action, thereby reducing the probability. Young people slipping and sliding on the ice, and old people striving to avoid doing the same, belong to separate and distinct cultures. They construct reality out of their experience of it. They see the world differently and behave differently; they tend to associate with kindred spirits, who reinforce their distinctive perspectives on reality in general and risk in particular (Adams, 1995, p. 22).

Following this kind of reasoning about the impact of culture, the formal/objective school of thought on risk, and its assertions, may not be as impartial or generalizeable as claimed. Research on children as road users has clearly revealed that their perceptions of risk are very

different from adult perceptions of risk. The research on parents reveals that they are not aware of these differences, despite their major influence on the behaviors of their children (Gillham and Thomson, 1996, p. 88).

Values and Politics

> *Risk is much more than rational decision-making within the framework of known probabilities....it is part of the dialogue on how best to organize social relations. In organizing social relations some things are considered important and others are not. (Douglas and Wildavsky in Zenk and Lemberman, 2001, p. 51).*

The issue of values leads directly to the realm of morality. The informal/subjective school of thought wants values represented in decisions about risk. "In thinking about how to choose between risks [i.e. which risks should be priority targets], informal values must take priority. It is a travesty of rational thought to pretend that it is best to make value-free (objective) decisions in matters of life and death" (Douglas and Wildavsky, 1982, p. 73).

Douglas and Wildavsky (1982) suggest that, objective approaches to risk are unrealistic and deceptive in their claim to be unbiased. Claims to lack of bias and 'contamination' by human values, these authors assert, are elitist and unrealistic. "The difference between experts and the lay public is that the latter, when assessing risks, do not conceal their moral commitments but put them into the argument, explicitly and prominently. 'It was a risk but I took it because:

> I couldn't refuse her dying wish;
> I had promised my child;
> I know what her family would say if I didn't try;
> He would have done as much for me.
> (1982, p. 73)

A good example of the absence of values in expert risk management can be found in City of Edmonton policy on school speed zones.

> School zones, which operate with a 30Kmh reduced speed limit, have not been used in the City of Edmonton since the early 1970s. These zones were removed because motorists did not adhere to the lower speed limit, which gave children a false sense of security. As an alternative, the major crossing points are highlighted in school areas and the students are taught safe methods of crossing the road

(Edmonton Transportation and Streets and Edmonton Police Service, 2001 p. 1).

Thomson (1996) offers an evaluation of this policy that I thoroughly support. "It is difficult to escape the inference that society shrugs off many of its responsibilities to the teaching profession" (1996, p. 3). "…one has to be realistic about what else can simply be passed across to teachers to deal with" (Thomson, in Gillham and Thomson, 1996, p. 103).

In my opinion, empirical evidence on the impact of adult role modeling on the sustainability of safe traffic behaviors taught to children was either ignored or not consulted when this policy was developed. For example, in 1978, Arena and Bachar, said, "Safety in the home is the result of deep morale values. Not what you say, but what you do will have the most benefits for your children's safety….your child watches you drive, play, swim, walk. He will soon compare what you say with what you do" (p. 10).

'Real' Risk Versus 'Perceived' Risk

Definitions and assumptions of real risk and perceived risk are at the heart of a debate between formal/objective and informal/subjective views of risk. For example, Zenk and Leberman, (2001) in the informal/subjective camp, take exception to objective assumption that only those risks that are quantifiable are unbiased, *real* and *actual* risk that trained professionals have identified and calculated. "Implied in the formal stance is the accusation that non-expert definitions of risk are 'subjective, often hypothetical, emotional, foolish and irrational' " (Kunreuther and Slovic, in Zenk and Leberman, p. 51). *Actual* or real risk is a 'convenient way of expressing the fact that some people share a particular, normative view of risk. Embedded in the concept of real risk is the notion that everyone views real risks in a similar way" (Douglas and Wildavsky in Zenk and Leberman, 2001, p. 71).

The implications of this debate are very relevant to the experience of teacher supervisors and other stakeholders in traffic safety education. The activities teacher supervisors reported follow the general five-step process (Brown, p. 78, 1998) of risk

management described above. Like Zenk and Leberman's outdoor educators, however, teacher supervisors make subjective judgements, using their perceptions to identify risks and manage them. Hence, they don't qualify as risk experts. But, how emotional and foolish are they? The AMA patrol program history boasts that it has a perfect safety record (1998).

Casualty Statistics versus Lay Knowledge

According to Adams, government policy which bases its activities on casualty records "draws a clear line between actual danger [represented by casualty statistics] and perceived danger. The [government] is prepared to spend money only to relieve actual danger. If a road does not have a fatality rate significantly above 'normal'...it is not eligible for funds or measures to reduce the danger...funds for traffic calming will be judged on casualty savings, not on environmental improvements or anxiety relief" (1995, p.10). Indeed, The Edmonton Transportation and Streets PWI formula for assessing the need for safety devices includes "the number of pedestrian accidents over the last five years" as a rating factor (1994, p.7)

"There are people living alongside roads that they perceive to be dangerous, but which have good accident records. They are told in effect that if you don't have blood on the road to prove it, your road is officially, objectively safe, and your anxiety is subjective and emotional...." Adams expands, "In the road safety literature, and the safety literature generally, it is still the mainstream position that casualty statistics provide the only reliable measure of the success or failure of safety schemes" (1995, p. 10).

Traffic Safety Education as a Risk Management Strategy

In this section of the literature, I have classified traffic safety education initiatives, including the patrol as *risk management strategies*. The preceding summary of literature on environmental, equipment and human risk factors as well as formal/objective and informal/subjective assumptions form the foundation for the patrol program and teacher supervisor roles. This first section of the review on risk management literature summarizes

relevant research in the discipline of traffic safety education. And the second section summarizes what little has been written that applies to teacher supervisors.

Cooperative Learning

The validity of education as a risk management strategy became apparent in phase three of fieldwork. This experiment with cooperative learning techniques verified patrollers' communication skills. And Thomson's summary of fundamental child development theory (e.g., Piaget, Vygotskky) on traffic safety education (Thomson et al., 1996) supports the efficacy of cooperative- or peer-learning techniques for learning about traffic safety.

> for Piaget it is conflict between ideas and experience that provides the impetus for conceptual advance, by necessitating resolution of the conflict. This points to the role of peer discussion in learning, particularly when children work together in a group...peers typically share the same communicative style and are less inhibited about talking with each other, this usually permits a fairly full airing of different views...the subsequent personal resolution of this conflict results in development (Thomson, 1996a, p. 7).

Mason, (1996) working with elementary school aged children learning environmental concepts supports this view.

Epistomology of Traffic Safety Education

Very briefly, the early foundation of traffic safety education research began with the theories Piaget and Vygotsky, who studied children's developmental capacities and learning processes (Thomson et al, 1996, p. 4-5). Upon these theories developmental psychologists completed exhaustive research on children's abilities and vulnerabilities as pedestrians. My perception is that most of this research was conducted in the 1970s and 1980s in northern Europe (e.g., Vinje, 1981; Van der Molen, Rothengatter and Vinje, 1981) and Australia (e.g., Cross and Pitkethly, 1989; Petit, 1994).

Research combining this knowledge about children's developmental capacities with educational variables, at least the studies most relevant to this study of teacher supervisors and the context of the patrol, seems to have primarily taken place during the 1990s in Britain (Lee,

Grieve, Pitcairn, Ampofo-Boateng and Thomson, 1993; Thomson, Tolmie, Foot and Mclaren, 1996; Thomson and Whelan, 1997).

Once it became evident that just educating children was not having a positive impact on reducing injuries and fatalities among children, the need to address social factors became apparent (Gillham and Thomson, 1996, p. 4). Thomson, a developmental psychologist himself, bridged the gap between the body of research on effective education for children and parental/adult influence. Thomson and Whelan (1997) developed a program called *Kerbcraft*, which they tested in the Drumchappel suburb in Glasgow Scotland. The project involved a qualitative enquiry component among adult volunteers in a club-like community environment who were trained to deliver pedestrian training to elementary school age children. The quantitative component of Kerbcraft measured better sustainability of children's pedestrian skills (over a six-month period.) than occurred without parental involvement.

The context within which Kerbcraft was developed has parallels with the context of this study. Thomson partnered with the U.K. Department of Environment and the Regions. This study of teacher supervisors is a result of a research partnership with by Alberta Motor Association (AMA), a large organization with provincial and national links. The UK Department of Environment offers opportunities for large-scale dissemination of the Kerbcraft program through its Regional Traffic Safety Officers (RSTOs). The AMA patrol program and its 550 participating schools, across the province offers equal opportunities for dissemination and is actually complementary to the proposed enhancements to school safety patrol program.

Where this study differs from Thomson's work is in the scope and choice of research participants. Unlike the parent volunteers in his Kerbcraft study, research participants in this enquiry are paid professional educators whose mandate requires supervision right at school intersections. Furthermore, RSTOs responsibilities for regions containing numerous communities (Thomson in Gillham and Thomson, 1996, p. 103) preclude the level of access that teacher supervisors have to individual schools and communities.

Teacher Supervisors as Risk Managers

The proposal that research participants in this study perform risk management did not emerge in explicit language or implication from the interviews. It emerged, rather as a phenomenon, during data analysis from use of open and selective coding as well as questioning techniques described by Strauss and Corbin (1990). Neither research participants nor any of the sources in the discipline of traffic safety education explicitly describe their reported behavior as risk management. The absence of research literature on teacher supervisors compelled me to search for information that approximates their reported experience. They described risks and the steps they take to minimize them and that was enough evidence for me to explore the relevance of risk management to what research participants had to say. Except for the Canadian Education Association's 1963 study, the literature reviewed for this section consists of non-technical literature (Strauss and Corbin, 1990, p. 55).

History. In 1963 the Canadian Education Association (CEA) conducted an environmental scan of 25 Canadian School Districts. Sixteen schools reported that *direction* of the patrol was the responsibility of police and/or the school board and eight reported that this role was the responsibility of school principals. Six of the schools reported that responsibility for direction of the patrol included teachers and either principals or police.

Standard Operating Procedures. Though not as well developed as is the case for outdoor educators, the literature on teacher supervisor responsibilities mostly fits into the category of standard operating procedures described by Zenk and Laberman (2001, p. 54.)

> Directly responsible for the School Safety Patrols, the Supervisor guides the patrols through their day-to-day activities, through scheduling, trouble-shooting, support and direct supervision of the Patrol at the crossing on a regular basis. They will also be responsible for ordering equipment through the AMA and School Patrol Coordinators (AMA, 1998, p. 9).

School safety patroller manuals or handbooks, more recentl manuals for teacher supervisors and a history of the patrol program were published on the AMA website and most recently updated in 1998.

Similarities between standard risk responses for outdoor education explained in Brown's Adventure Risk Exposure Model (Figure 8, p. 53), the patrol program training and monitoring by teacher supervisors, as shown in Figure 10 supports the proposal that the patrol and teacher supervisors play a legitimate role in a risk management process.

Figure 10
Comparison of Adventure Risk Responses and School Patrol Responses

Adventure Risk Exposure Model Risk Responses For outdoor education participants Source: Brown, 1998, p. 75	**Training for School Safety Patrollers Risk Responses Source: AMA ???**
Set age limits	Patrollers are 11-12 years old
Medical screening	Informal screening of abilities by teacher supervisors
Pre-activity advice	Delivered by teacher supervisors and AMA Regional Coordinators.
Risk information	Delivered by AMA Regional Coordinators
Skills training	
Onsite briefing	
Sequenced experiences	Younger patrollers (Grade 5) partner with experienced Grade six patrollers
Onsite management	By teacher supervisors and occasionally visits from AMA Regional Coordinators
Barriers (e.g., walkways)	Teacher supervisors identify risks (e.g., no painted crosswalk, remote patroller stations, buses interfering with patroller line of sight
Belay (stop/abandon activity)	Patrollers advised if situation becomes too dangerous to cross remaining students and leave their stations

The Community Leadership Program

Flurio and Stafford's Safety *Education*, (1969) goes beyond the brief vision statement for the CLP. It outlines a Junior Safety Council, objectives and teaching tips that bear strong resemblance to the CLP, but goes beyond that to suggest that the patrol program would function as a clearinghouse for "various school activities concerned with accident prevention" (p. 95). The plan is for such a council to be supervised by a teacher and linked with the community (p. 93).

Safety Audits. Support for the safety audit component of the CLP occurs throughout the literature on risk and traffic safety education. Brown (1998), for example, suggests comprehensive data on risks is critical to risk assessment (p. 99). Data on near misses is valued for similar reasons (Thomson in Gillham and Thomson, 1996). Posner (2002) in *Preventing School Injuries* states that "A first step in developing safe walking routes is to conduct a comprehensive assessment of neighborhood and major walking routes used by students…" (p.76). Raymond's *Safety Across the Curriculum* (1999), contains content and lesson plans and devotes a chapter to 'Risk Assessment and the Management of Risks'. Finally, Roberts suggests

> there are materials which enable children to draw on the accident data for their own school….this approach has the added benefit, that since schools are relatively closed communities, and normally have excellent accident reporting systems for less serious as well as more serious accidents, there is scope for good measurement of the effects of any program introduced, with before and after data readily to hand. (In Gillham and Thompson, 1996, p. 63)

Law Pertaining to the Patrol

The CEA (1963) surveyed some aspects of patrol programs across Canada. At that time "in only a few provinces are school patrols officially authorized by Statute or Regulation, although they are organized and operated in all provinces" (p. 1). "In Alberta, Section 160 of the School Act gives the board…authority to operate pupil traffic patrols at street intersections in the vicinity of any of its schools and at any school bus stops" (p. 2). A

similar authority for Alberta school boards to engage in patrol programs is also apparent in CEA and ATA documents, which state that if a principal wants to participate, he/she can. These documents caution that parents have the authority to exclude their child from participating (CEA, 1963, p. 2; ATA 1999, p. 25; Flurio and Stafford, 1969, p. 102).

Insurance

The 1963 School Act also allows school boards to 'keep in force' insurance policies for its employees and for students engaged in the patrol (CEA 1963, p. 2). The only apparent difference between the 1979 Act and the 1999 ATA publication is that this later citation emphasizes that insurance covers teachers/employees "acting within the scope of their duties....A teacher may delegate specific and limited aspects of instructional activity to non-certificated personnel [i.e. teacher aids or parent volunteers], provided that the teacher supervises and directs such activity" (ATA, 1999, p. 22).

Co-curricular and Extra-Curricular Activities

In general, the term *co-curricular* activities refer to "those activities involving students and teachers which are related directly to the function of the school and to the general format of education but which occur outside of regularly scheduled classroom periods. They may arise out of any program undertaken by the school" (ATA, 1999, p. 21).

This ATA document goes on to explain that co-curricular activities be an integral part of the educational process, and match the educational philosophy of the school. It is expected of teachers "to support whatever program of co-curricular activities colleagues agree to institute....Their participation should be voluntarily, with a reasonable scope and such activities should be shared equitably by all staff"" (ATA, 1999, p. 20). The only difference between co-curricular activities and extra-curricular activities that I detected is that the latter are pursued "to motivate students and enrich their educational experience *outside* the curriculum" (p. 21). Three aspects of teacher responsibility: the principle of 'in loco parentis,' negligence and supervision are, in my opinion, particularly relevant.

Figure 11
Teachers' Rights, Responsibilities and Legal Liabilities

Source: Adapted from ATA 1999

In Loco Parentis—a teacher could be liable for damage caused to a pupil where the teacher's conduct falls below the standard of care commonly accepted as being reasonable in a parent-child relationship. A teacher may even have to meet a higher standard of care where special knowledge makes the teacher aware of dangers which the normal parent might not appreciate. The principle of in loco parentis: adds to their 'duty of care'.

Negligence—Negligence exists where the activity or conduct on the part of the teacher creates an unreasonable chance of danger. When teachers ignore the danger or do not see the danger when they should, they may be held negligent if someone is injured…teachers who possess "expert" knowledge must exhibit a higher standard of care than ordinary parents in elements of the subject matter or program which are inherently dangerous…Teacher's own experiences will normally give them a good idea of what level of supervision is required to ensure an adequate degree of safety.

Supervision—Adequate supervision does not mean constant supervision of all students at all times. The teacher's duty is to guard against dangers, which could reasonably be foreseen…The extent of supervision required depends upon the age, mental ability and emotional stability of the students being supervised. Student's age should be taken into account in arranging supervision. The student should be instructed as to the dangers inherent in a given activity, as well as on how to perform the activity.

Injury—In the event of a student injury, the teacher "must take all necessary steps to secure medical attention, make decisions in consultation with the principal, and notify parents. The teacher's responsibility ends as soon as the child enters the care of a qualified doctor, but continue efforts to contact parents until they are successful in doing so.

Assault—Section 265 (1) of the Criminal Code identifies three elements of common assault: (a) lack of consent by the victim (b) intention and (c) application of force to the victim (ort threat of force which the victim believes will be carried out)….Provocation, such as insulting words or gestures, is not a defense.

School Discipline—For most teachers, the best course of action in a case of apparent criminal conduct on the part of the student is to put the matter immediately and in person, in the hands of the principal who, in turn should make a decision as to whether or not the police should be involved.

Non-Certificated Personnel—The term 'teacher's assistant(s) is used by the [Alberta Teachers' Association] to designate non-certified personnel of all kinds employed to assist teachers. The Association favors the use of teachers' assistants(s) provided they are utilized in accordance with Association policy. …the teacher must determine the assistant's specific duties, diagnose educational needs etc. Another category of non-certificated personnel is parent volunteers. There is a greater responsibility for supervision by the teacher to compensate for the lower level of responsibility inherent in the role of volunteer as compared to the role of employee.

Summary

This literature review has pulled together literature from a variety of disciplines to inform understanding of the experiences teacher supervisors interviewed for this study reported. This chapter also set out to achieve goals for literature review set out by Hart (1998). Hence, library searches were conducted using web-technology and browsing the shelves. The acquired sources were grouped (p. 19) according to format. Websites were copied to favorites folder and pertinent web pages were printed. Articles and some sections from books were copied, marked with highlighter pens and summarized, then stored along with web-page print outs in magazine files by subject. This made information easy to add to and locate when needed.

To achieve the goal of locating this study in a discipline (Hart, p. 47), several types of qualitative methodology were reviewed to find the best fit (Yin, 1994). They included literature on community development, case study, pre-test, post-test and action research. As mentioned above, I used magazine files to store articles and book chapters pertaining to each of these approaches. Some of the techniques typical of these methodologies, such as action research cycles (Elliot, 1991) and the case study convention of a strong presence of my voice as a researcher in this thesis (Gall, et al, 1996, p. 580) were very useful, so I incorporated them in the implementation of qualitative research interviews and data analysis. Other sources of methodology incorporated into the design of this study included Hart (1998), Gall, et al., (1996), Bogden and Biklin, (1996) Kvale, (1996), and Strauss and Corbin (1990).

Exploring the literature on children as road users and traffic safety education enriched fieldwork. Thomson's summaries of research employing this knowledge to explore educational variables and Brown's summary of research risk management in outdoor education revealed the development and structure of knowledge in these disciplines. And reading research articles referenced by Thomson and Brown provided what Hart refers to as

'prior understanding' that informed interview questions (p. 16). This study is also linked to a research challenge identified by Thomson, that of large-scale dissemination (1996).

When data analysis generated the theme of risk, it was necessary explore further sources. In the discipline of risk, the work of Brown and Zenk and Leberman in outdoor education turned out to be very relevant. For example the debate between formal/objective and informal/subjective thinking about risk located the experience of teacher supervisors in the informal/subjective sector. Not only that, it was possible to verify traffic risks mentioned by teacher supervisors in statistical data within the structure of academic thinking about risk.

Risks that teacher supervisors mentioned can be grouped into risks associated with the environment, with equipment and with people. In fact, exploring the discipline of risk management made it possible to 'dimensionalize' the experience and traffic risks reported by teacher supervisors (Strauss and Corbin, 1990, p. 69-72.). For example, environmental factors associated with traffic risks include the location of risks and timing. Literature on traffic risk factors involving equipment included statistics on the number of vehicles involved in injuries, fatalities and property damage. Literature on risks associated with people included references to children, parents, socio-economic factors and emotional risk.

In terms of risk management, this review explored Brown's outdoor Adventure Risk Assessment Model and compared it to the traffic risk assessment models of Loggins (1989), Edmonton Transportation and Streets (1994) and the rudimentary NHTSA Walkability Checklist 2002). The result of this comparison was a close fit between the five generic risk management tasks proposed by Brown (1998, p. 79)

1. risk identification (hazard assessment),
2. risk evaluation (frequency, severity),
3. risk adjustment or control (options to retain, reduce, transfer, or avoid risk),
4. risk management plan [choices],
5. plan evaluation and update [monitoring].

CHAPTER THREE
METHODOLOGY

The researcher has a scientific responsibility to his profession and his subjects that a research project yield something worth knowing and that it is as controlled and verified as possible (Kvale, 1996, p.118)

The prospect of contributing to knowledge about traffic safety and my strong interest in research as a career compelled me to take my responsibilities as a researcher very seriously. Obvious to me, was the need to support research decisions with conventions contained in methodology literature. Although I was initially overwhelmed by methodological options, Yin's assertion about the goal of "avoiding gross misfits" between the research problem and the methodology (1994, p. 4) seemed a reasonable primary goal for a neophyte researcher like myself. A second methodological goal I set out to achieve was to do justice to the experience reported by research participants. A third methodological goal I set for myself was to learn how to use qualitative data analysis techniques effectively.

Supports for achieving these three methodological goals include

- participating in a substantial amount of fieldwork in order to develop a research topic (Gall et al., 1996),
- choosing a methodology (qualitative) that matches my own personal orientation to research (Gall et al., 1996, p. 38) and my abilities (Strauss and Corbin, 1990, p. 36), and
- studying the worthwhile social problem: traffic-related casualties and property damage.

Post-positivist Philosophy

Researchers who subscribe to post-positivist epistemology believe that the study of individuals' interpretations of social reality must occur at the local, immediate level. (Gall et al.,, 1996, p. 21)

Before deciding to use the simple strategy of employing qualitative interviews and data analysis, three approaches to qualitative methodology: community development, case study and action research were considered. A comparison of these methodologies appears in Chapter Two, Review of the Literature, (pages 28-31). I chose qualitative methodology for fieldwork and this study primarily because the research problem: How do teachers who supervise school safety patrol view the proposed Community Leadership Program fits well with the purpose of qualitative research as defined by Berg (1995).

> Qualitative research properly seeks answers to questions by examining various social settings and the individuals who inhabit these settings. Qualitative researchers, then, are most interested in how humans arrange themselves and their settings… symbols, rituals, social structures, social roles and so forth…qualitative techniques allow the researchers to share in the understandings and perceptions of others and to explore how people structure and give meaning to their daily lives… themselves and others. (p. 7).

Zenk and Leberman (2001) used qualitative research interviews, a small sample (twelve) and qualitative data analysis to study outdoor educators. Their choice supports the use of qualitative methodology for this study of six teacher supervisors.

Evolution of the Research Problem

Have preferences, but do not be single-minded in choices.
In the beginning you never know what you will find (Bogden and Biklen, 1992, p. 61)

Figure 4 on page 15 summarizes the three phases of fieldwork conducted for this study. After the third phase of fieldwork, I cleaned off my desk at the AMA and planned to resume work on a non-traffic related thesis topic. My thesis advisor had other ideas. "I think you should change the focus of your thesis to the CLP…." After a long pause on my part, thinking about what that would mean in terms of time, I naturally asked "Why?" His

response? "It's much more likely that you'll generate some new knowledge around the CLP. At the master's level that is unusual. With the other topic, there is already a fair amount of research in place." I said 'I'll think about it'.

Everything pointed toward the CLP as a good context for the research we started out to do. This is the way to go. We have a clear purpose and the umbrella of the Mission Possible strategy to support it. Strauss and Corbin (1996) suggest that research topics are often assigned to graduate students by thesis advisors (p. 34). Armed with the results of fieldwork phases two and three, a better understanding of Mission Possible and my commitment, my advisor approached the AMA with the prospect of working together on more development research for the CLP. The AMA agreed enthusiastically and proposed patrol teacher supervisors as research participants. With a clearer focus on the area of research, the next step was to articulate a more specific research problem statement. Miles and Huberman's guidelines were used for 'locating sub-problems" in the main problem (1994, p. 61).

Choosing Research Participants

In some instances, purposive samples are selected after field investigations.. in order to ensure that...persons displaying certain attributes are included in the study (Berg, 1995, p. 179.)

Selecting research participants for this study reflects a purposive approach that met both the needs of the AMA and mine. When agreement was reached between myself and the AMA that the patrol and the CLP (Figure 2, p. 7) offered a promising context for study, the AMA recommended five teacher supervisors to interview, obtained their consent and forwarded their contact information to me. The AMA also approved my request to include a sixth teacher supervisor who participated in fieldwork.

Sampling Methodology

From a research perspective the choice of six teacher supervisors is supported by a number of sampling guidelines. For example, the selection of *recommended* teacher supervisors complies with a *criterion sampling* strategy, which Gall et al., (1996) believe to be "particularly useful in studying educational programs" (p. 234). This group of research participants can also be described as *homogenous*. That is, the teacher supervisors interviewed "represent a sample of similar cases" that "can be studied in depth" (p. 233).

Other advantages of the sample chosen for this study include a reasonable scope for a Master's level inquiry (Kvale, 1996, p. 103; Strauss and Corbin, 1990, p. 37) and the potential for further study. There are 550 elementary schools enrolled in the school safety patrol program and the same number of teacher supervisors in Alberta alone (Josie Wicentowich, Personal Communication, Telephone Conversation, February 26, 2003). What has been learned in this study of six teacher supervisors may be explored and verified with a larger sample.

Potential Contribution to Traffic Safety Research

The number of teacher supervisors in Alberta and other countries also has importance for researchers exploring other school/community based traffic safety education programs. Thomson et al., (1997) explored the logistics and effectiveness of adult volunteers in elementary school. And Roberts states

> I believe that people who live in a particular environment....and are daily engaged in the task of looking after children, are better placed, on the whole, than are health and social welfare professionals to be aware of, and responsive to, the risks in their own environments" (In Gillham and Thomson, 1996, p. 60).

The community based research being pursued by Thomson et al., (1997), a strong positive sense of collaboration from the outset of fieldwork with AMA personnel and the simple *convenience* (Gall et al., p. 217, and 234) of selecting research participants living in Edmonton made it easy to accept the AMA decision about who to study.

Validity

According to a dictionary definition, the term validate means to "support or corroborate on a sound or authoritative basis" (Merriam Webster, 1989, p. 1302). Berg (1995) defines validity as a result of *triangulation* that not only includes multiple data collection techniques, but multiple perspectives or sites trained on the topic being investigated (p. 5-6). Gall et al., (1996) cite Yin's four types of validity and Altheide and Johnson's four criteria for seven additional procedures that case study researchers have developed as checks on the validity and reliability[8] (p. 572-574). And Strauss and Corbin (1996) offer seven criteria for "judging the adequacy of the research process" (p. 253).

To meet Berg's expectations about training multiple sites on a research problem, I considered three qualitative approaches to methodology: community development, case study and action research. In terms of triangulation as multiple data collection (1995, p. 5), I conducted observations during fieldwork, interviewed six research participants, and compared their reports to independent statistical monitoring data (City of Edmonton, 2002).

A five-day, qualitative data analysis workshop with Juliet Corbin and a detailed description of data analysis represent my efforts to address their criteria for sound research (1996, p. 253). Finally, the literature on risk management in outdoor education validated not only interpretation of results but the choice of qualitative interviews and data analysis to explore the experience of frontline risk managers (e.g., Zenk and Leberman, 2001).

Confidentiality and Anonymity

At each interview, I outlined the purpose of the study to participants and stated that the transcripts would be stored in my home in a fireproof, file cabinet for five years and then destroyed. No one has access to the cabinet other than myself (Gall et al, 1996, p. 91). Then each participant signed a consent letter (Berg, 1995, p. 212). Research participant's all felt

[8] "Reliability is the extent to which other researchers would arrive at similar results if they studied the same case using exactly the same procedures as the first researcher" (Yin in Gall et al, 1996, p. 572).

comfortable connecting themselves and their schools to the research, but I decided to avoid this.

As anticipated by Berg (1995, p. 213) and Gall et al., (1996. P. 92), research participants were well known by AMA personnel as were their particular schools and locations. My thesis advisor also knew the identity of the research participant that I chose. Hence, to achieve some level of anonymity, I "systematically changed each of the real subjects' names to a pseudonyms" then I renamed the six schools in the order in which interviews were conducted (e.g., school one, school two, etc.) (Berg, 1995, p. 213; Gall et al., 1996, p. 91). Over the course of data analysis, which again was completed in the same sequence as data collection, I came to associate each transcript with the corresponding school number rather than the individual research participant names. Hence, there was little chance of mentioning names when consulting with anyone other than my thesis advisor.

Using the names and addresses of each school was necessary when I spoke to City of Edmonton monitoring personnel to clarify traffic volume counts at the six schools. They collect and analyze the data, so their expertise was critical to achieving some level of accuracy. To maximize confidentiality during these brief conversations, I did not mention the purpose of the study or that I had interviewed teachers at these schools.

My familiarity with City of Edmonton mapping activities led me to electronic, printable, address-specific street diagrams (City of Edmonton, 2002). (See Figure 13, p. 78). Because I found them after data collection, I used them to compensate for poor results from research participants' sketches made during interviews. The street diagrams help convey research participants' descriptions of activities in their school intersections in Chapter Four.

Ethics

Two issues dominate recent guidelines of ethics for research with human subjects: informed consent and the protection of subjects from harm (Bogden and Biklen, 1992, p. 49.)

The proposal for this study was submitted, as required, to the Department of Adult and Higher Education for an ethics review. This was granted prior to data collection. The AMA contacted prospective research participants to determine whether or not they wished to be involved in this study (Bogden and Biklen, p. 53). After confirming their willingness to participate over the telephone, I sent each participant a covering letter (see Appendix A) and the one page description of the CLP goals (Figure 2, p. 7). Kvale (1996) was a major influence in positioning myself and my demeanor as a student learning about research (p. 5) and in conveying my sense of responsibility toward the topic (p. 118). At the outset of data collection, this responsibility felt a little daunting. Because, at that time, it became very apparent to me that, beyond the rules, "the integrity of the researcher—his or her honesty and fairness, knowledge, and experience—are decisive factors" (Kvale, p. 119) in conducting research in an ethical manner (Gall et al., 1996, p. 95).

Another tack I employed to demonstrate my commitment to the research topic and process is based on the assertion that ethical research goes beyond the initial briefing (p. 108-123). Kvale credits Lincoln (1990) with the proposal that "replacing the concept of informed consent should be....dialogue that runs throughout an investigation, with the negotiation of research processes and products with one's respondents, so that there is a mutual shaping of the final results" (In Kvale, 1996, p.114). This proposal also promised to support a sense of reciprocity (p. 119) during the interview and results grounded in the experience of research participants (Strauss and Corbin, 1990, p. 24-25).

Data Collection

> *The key issues of the interview concern what, why and how: what—acquiring a pre-knowledge of the subject matter to be investigated; why—formulating a clear purpose for the interview; and how—being familiar with different interview techniques and deciding to apply in the investigation. (Kvale, 1996, p. 126)*

Pre-interview planning was guided mostly by the advice in Kvale (1996) and Gall et al., (1996) For example, I addressed the issue of *what* to ask through fieldwork involving the patrol program and a review of research literature on traffic safety education. Fieldwork and safety education literature provided the answer to *why* study a sample of patrol teacher supervisors: they are frontline stakeholders, represent many counterparts at other schools and other researchers are exploring community-based traffic safety education opportunities involving adults (e.g., Thomson and Whelan, 1997: Thomson and Gelen, 1998; Tolmie, Thomson and Foot, 2000).

Semi-structured Interviews

The decision of *how* to conduct research interviews was based on the match between the purpose and stage of this inquiry among teacher supervisors and Berg's (1995) rationale for unstructured interviews. That is, unstructured interviews are appropriate " to augument field observations, establish rapport and learn about [the subject's] culture" (p. 32-33). Gall et al.,'s assertion also supports a semi-structured approach to interviews. This question format has " the advantage of providing reasonably standard data across respondents, but of greater depth than can be obtained from a structured interview" (p. 310).

In practice, I provided some structure for interviews by using the general research questions and the CLP goal statement (Figure 2, p. 7) as a guide for discussion. Kvale (1990) supports this approach. "In program evaluation, the most common organization is around program goals statements" (p. 15-16). To find out if this approach would work, I piloted the use of the goal statements (Gall et al., 316 316). During the pilot I also tried to establish

rapport, stay open to emerging issues, use short questions and follow up or probe questions to clarify and validate meaning (Kvale, 1996, p. 145; Gall et al.,, p. 318; Berg, 1995, p. 34).

Based on the success of the pilot and Kvale's caution about "how much information about the study needs to be given in advance" (1996, p. 119), I decided to send copies of the CLP goals to research participants prior to conducting the interviews (Kvale, p. 127). For recording the interviews, I used a walkman-sized cassette tape audio-recorder loaded with batteries and an adapter that plugs into an electric outlet. Along with this device I had a very tiny microphone with a clip and a long cord. I also took along a borrowed second recording device with a built-in microphone and extra tapes to use if the first device failed.

Establishing Rapport

More specific suggestions also influenced the semi-structured interviews used in this study. For example, Gall et al., and Kvale agree that the researcher should establish rapport 'by engaging in small talk in an every-day conversational style before beginning the interview" (Gall et al, p. 318). When Charles came into the room, he seemed kind of tense: slouching in his chair with his arms folded tightly around his chest. An opportunity to put him at ease came up when he told me he had only been running the patrol for six months, but was singled out by the AMA School Patrol Coordinators as an exemplary teacher supervisor. I used some humor to loosen him up a bit.

He immediately sat up straight and started talking with his hands. Figure 12, page 78 contains rapport-building questions that I used at interviews. As part of rapport building, I also followed Gall et al.,'s suggestion to *position* myself in a friendly, professional manner (p. 318). I told participants "I am a graduate student with exposure to research on traffic safety education, a need to learn research methodology and a desire to assist the development of the CLP on behalf of the AMA."

Reconnaissance

Despite all the pre-interview planning, some glitches occurred. For example, the comments made by the first research participant seemed a bit rehearsed. A few minutes into the same conversation, I also realized that the cassette tape was not moving. So, I stopped the interview and plugged in the back-up tape recorder. Afterwards, I realized that the first recording device is voice-activated. It automatically starts recording when someone is talking and stops to save tape when the conversation pauses.

Visual Data

I felt more relaxed at the subsequent interviews and the conversations were a lot more spontaneous. Subsequently, with a cursory understanding of the use of diagrams as discussed in Schratz and Walker (1995, p. 64-90), I asked teacher supervisors to describe what happens at the school crosswalk and offered them a piece of paper to illustrate what they were describing. The result wasn't useful. And I didn't have much time to think of another strategy before the next interviews.

Neighborhood Maps. When I began data analysis I could not make sense of the sketch made by the teacher supervisor at school three. Nor, during a debriefing session, could I explain to my thesis advisor what she had said. Only a street diagram, I thought, could illustrate the situation. A colleague at Edmonton Transit directed me to the 'neighborhood' maps available on the City of Edmonton and Streets website (2002). As shown in Figure 13, page 78, these maps allowed me to capture what research participants described. And it was possible to generate similar maps for the schools of other research participants. As stated in the literature review, the use of maps and road diagrams is quite common in traffic safety education research (e.g., Demetre, Lee, Grieve, Pitcairn, Amofo-Boateng and Thomson, 1993, p. 351; Van der Molen, Rothengatter and Vinje, 1981, p. 178-179))

Photographs. I interviewed the teacher supervisor for school six at her home. She described how the size of the corners at her school are smaller than average, and the wheelchair ramps

steeper than average on north and southeast corners of the intersection. There was no way I could appreciate what she was referring to without a visit to the school. There, I found private fences intruding into the curbs and steep wheelchair ramps (curb cuts). I took photographs, chose the most illustrative photo, scanned it and added arrows and circles (Figure 26, p. 118).

Data Analysis

analysis is without question the most difficult part of any qualitative research project...(Berg, p. 59)

At first, the number of techniques and the amount of the data I had collected seemed formidable: like climbing a steep and slippery slope. For one thing, as mentioned above, the focus of the original sub-problems had changed. Hence, at the outset of coding, I faced unanticipated results. Two thirds of the data was about interactions at the school intersection. Did I go horribly off track? What had I collected if not logistics for the CLP? Is it OK if I veer from my topic and deal with what appears to dominate the data? Are these results meaningful? Useful to the purpose of implementing the CLP? Without an immediate answer to these questions, I proceeded to explore data analysis methods.

Handling Data

At the outset of preparing the data for analysis, I borrowed Bogden and Biklen's family codes (1992, p. 167-172) and followed their suggestions for handling data (p. 175-179). As an aid to memory, I wrote the name of each family code (e.g., Setting and Context) on individual index cards along with suggestions as to what data to classify under each code and an abbreviation for each code. Then I attached these cards to folders. Having completed this rudimentary task, I identified paragraphs as my unit of analysis or passages encompassing interview dialogue. Then I pencilled in encompassed the coded text with brackets and wrote abbreviations in the left margin.

Figure 12
Sample Probes and Paraphrasing

Sample Paraphrasing: Clarification/Validation

So, that would not be hard to do?"
So, you think [patroller presentations] at assemblies would not be a big deal right now?"

School Intersection
Who passes through this intersection?
Could you describe one type of interaction when a vehicle slows down, people are crossing or they're waiting on the other side?

Feedback
That's a really good point!
I'd would never have thought of tall those things!

School Safety Audit Goal
So, you'd be concerned about…the safety audits, that kind of thing?

Figure 13
Sample Street Diagram
Source: City of Edmonton Maps (2002)

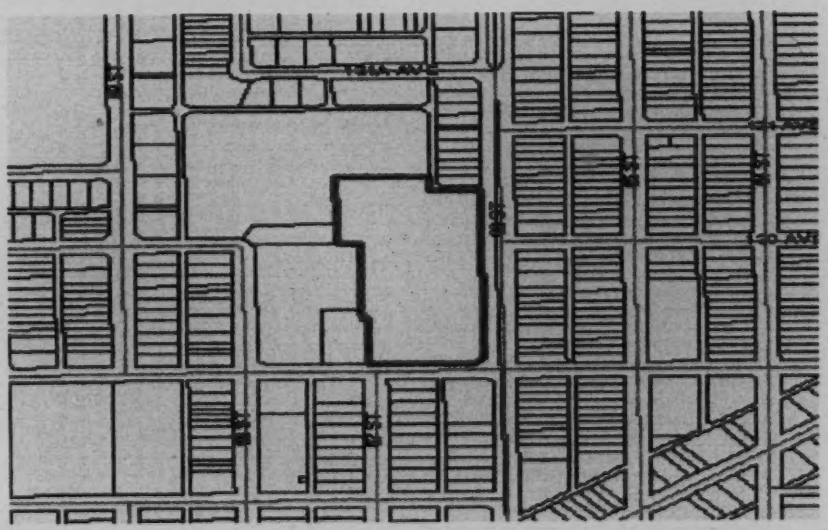


Figure 14 below offers an example. In this case, the passage enclosed in brackets appeared to fit into the Relationship and Social Structure coding family, which I have abbreviated as "9RSS" and the Strategy Code "8S." Following suggestions from the same source, I made extra copies of each coded transcript. Then I cut up the coded passages, grouped those with similar codes and placed them in the corresponding folders (Bogden and Biklen, 1992 p. 177).

After coding and sorting passages into folders in this manner, I found that I did not know what to do next. About that time, an opportunity to attend a week-long workshop with Juliet Corbin came up. Afterward, I realized that my early coding was out of sequence. I had tried to do axial coding before completing open coding. So, I started over again.

Figure 14
Relationship, Social Structure and Strategy Codes

Coding Family	Passage/Paragraph/Item	Line
9RSS	*[If you bring them [patrollers] out in the forefront*	*1*
		2
	a bit, people will listen.]	*3*

Open Coding

Open coding is the part of analysis that pertains specifically to the naming and categorizing of phenomena through close examination of the data. During open coding, the data are broken down into discrete parts..."(Strauss and Corbin, 1990, p. 62).

Strauss and Corbin (1990) advise researchers to begin open coding by doing an "analysis of a word, phrase or sentence." They recommend looking for any that strike 'you as significant, important, or of interest" (p. 81-82). Berg uses the term *semantics* to describe this practice of identifying words that interviewees emphasize (1995, p. 181-182). Identifying code words or 'naming categories' can, according to Strauss and Corbin (1990) come from

"disciplinary and professional reading ...and from phrases used by informants [research participants] themselves…these terms are called *in vivo* codes" (p. 68-69). Regardless of the source, these codes, these authors state "The important thing is to name a category so that you can remember it" (p. 67-68).

NVIVO Software. About the time of my second attempt at coding, I switched from the manual method of grouping coded data in folders to using NVIVO qualitative data analysis software. The first step in using NVIVO is to import the data: in this case six transcripts. These remain as discrete documents. Then I created the same coding families proposed by Bogden and Biklen (1992, p. 167-172) and shown in Figures 14 (p. 79) and 15 (p. 81).

Creating a code in NVIVO automatically sets up a mini electronic file. Any subsequent passage that fits that code word can be highlighted and sent to that code's electronic file. The coding categories can be set up at the outset or as the researcher works through the transcript. Also, NVIVO's *browse* function allows the user to *browse* codes to read through coded text and review what has been attached to the code names. Code names are also easily changed in NVIVO, using a *rename* function similar to that used in renaming computer word-processing files. One can also add sub-categories to each code and end up with *trees* and *nodes* exactly like those described in *Bliss*, Monk and Ogborn (1983).

Coding Inventory. Bogden and Biklen recommend developing a coding system containing no more than 30 –50 codes (p.176) and playing "with new coding possibilities" (p. 162). With the ease of coding in NVIVO, and without having to index every decision, I at first generated about 150 codes. Hence it felt better when I read that "Your first attempt to assign coding categories to the data is really a test to discover the workability of the categories you have created" (Bogden and Biklen, 1992, p, 176). Using a *drag-and-drop* function it was fairly easy in NVIVO to sort these codes into the inclusive coding families I created at the outset and to develop the subcategories as shown in Figure 15.

Having completed the analysis up to this point, I was left with six main categories of data: the family codes. I also had many sub-codes, but no clear sense of the relationship between these codes. Had I progressed? Or had I slipped back? When I checked Strauss and Corbin (1990, p. 57-74), it appeared that I had accomplished some components of open coding.

Figure 15
Sample Coding Families and Sub-codes or *Trees*

Setting & Context Coding Family	
Intersections	(Level 1, or 'Tree" code)
Curb cuts	(Level 2 category or "child" code)
Street Furniture	" " " "
Painted crosswalk lines	" " " "
Traffic lights	(Level 3 category or child code)
Stop signs	" " " "
Bus stops	" " " "

Questioning the Data

Strauss and Corbin (1990) complete their definition of open coding by suggesting that when the data is broken down, the discrete parts should be "closely examined, compared for similarities and differences, and questions asked about the phenomena as reflected in the data. Through this process, one's own and others' assumptions about phenomena are questioned and explored, leading to new discoveries" (p. 62). The questioning techniques I used in to analyze the data included Strauss and Corbin's *flip-flop* technique (p. 84-87), *wave the red flag* (p. 92-93), the *5 Ws* (who, what when, where and why) (p. 77-80) and a *close-in comparison* (p. 88).

Waving the Red Flag. Strauss and Corbin, (1990) caution that "You should become very sensitive to certain words and phrases. Ones such as *Never* and *Always*...These words and phrases should be taken as signals to take a closer look" (p. 91). To try this, I first identified the generalization *nothing* in the transcript for school 1. Then I used *NVIVO* to search across all six transcripts for passages containing the word *nothing*. Having assembled passages containing the word *nothing*, I read them over and looked for similarities and differences. Then I proceeded to ask questions about these words, recording my questions and answers in memos.

Memos. Memos are "written records of analysis related to the formulation of theory" (Strauss and Corbin, p. 197). As an example, after reading a passage like "When I'm out there, nothing happens" I asked myself the following questions and recorded them. *Does this mean that when research participants are seen at the crosswalk as monitoring the situation, students comply with safety rules? Does this also refer to compliance among other pedestrians and motorists when the teacher supervisor is visibly monitoring activities?*

Flip-Flop Technique. Combining the red flag technique with the *Flip-Flop Technique*, that is "turning the concept of [nothing] upside down" (Strauss and Corbin, p. 84), I reasoned from the context of this statement, that the opposite of *nothing* might mean something. I also searched all the transcripts for occurrences of *something*. The underlined words in Figure 15 offer an example of how research participants used these words. In a memo, I asked "Might *something* refer to student misbehavior? Or something more serious?"

Figure 16
Flip-flop Technique

Thank goodness nothing ever happens. I hope I pray but if something ever did, that patr would just ...be devastated....for their life.

Supporting the interpretation of *something* and *anything* as meaning an incident out of the ordinary, of more severity, is a passage from school four, where *something* is used as a euphemism for a *hit*. See Figure 16 below.

Figure 16
Something is a ***Hit***

....I think this [the CLP] is a good way to do that 'cause we've had a number of near misses, half a dozen out here. I had a kid that was clipped, you know, so.... Last year we had a kid hit, yeah. It wasn't related to the school patrol. She was hit down the street. She, she was running across the street and a car hit her....she almost died. She's got brain damage.

The same process of waving the red flag suggested a closer look at words like *busy* in reference to traffic in school intersections and in reference to motorists: doing *u-turns*, turning into crosswalks occupied by pedestrians and *near misses*. To understand and explore these observations, I turned to literature (Strauss and Corbin, 1990, p. 49). And this step enabled me to dimensionalize properties such as *busy* and motorist *traffic violations*.

Municipal traffic volume data, for example, enabled me to "locate the property [of *busy traffic*] along a continuum" (Strauss and Corbin, 1990, p. 69). That is, traffic volume at the schools of research participants ranges from an average of 1900 to 6700 cars per day (City of Edmonton, 2000). Provincial statistics revealed that the troubling motorist behaviors mentioned by research particpants are among the 14 top driver errors (Table 7, p. 42) that lead to injuries and fatalities (Alberta Transportation, 2001). I also located Van der Molen's traffic system characteristics (Figure 5, 33) included most of the hazards or "sources of danger" (Webster, 1987, p. 557) mentioned by research participants.

Axial Coding

Axial Coding is "A set of procedures whereby data are put back together in new ways after open coding, by making connections between categories" (Strauss and Corbin, 1990, p. 96.)

Discovering the main theme of risk management in the data collected for this study was achieved with a combination of questioning techniques. Though Strauss and Corbin explain how they sorted coding into "conditions, context, action/interactional strategies and consequences" (p. 99), I just couldn't make sense of this. Instead, I used the flip-flop technique and the 5Ws (who, what, when, where and why): another of Strauss and Corbin's questioning techniques (p. 93) to unfold the main story line in the data. Then I turned to literature to verify my interpretation (p. 48-56).

When I asked interviewees to describe interactions in their school intersections, five of the six research participants launched unsolicited, into descriptions of how they cope or manage *hazards*. Using the flip-flop technique, I memoed as shown in Figure 18.

Figure 18
Memo

If these individuals have identified hazards and formulated strategies to cope with hazards, then they must be trying to reduce hazards. These teachers, despite their busy lives, welcomed the CLP and were actually implementing the presentations component. Why? They describe traffic as busy. They also identify what: physical hazards they have to maneuver around or reduce.

Some hazards are human. Some are physical. Physical and human hazards occur at school intersections mostly during morning rush hour where the patrol could represent preventative action against human factors: a risk management strategy. That might explain why teachers have partially adopted its components. It may make their jobs a bit easier by garnering cooperation, thus sharing the management of risks.

Why? "If you put patrollers in front a little, people will listen." People listening to patrollers at the start of the school year and when the seasons, weather and outdoor activities change. Physical and human hazards teachers want to avoid is something: having someone hit or injured.

Literature on Risk in Outdoor Education. A successful search for relevant literature on risk management exemplifies Strauss and Corbin's assertion that "There is a constant interplay between proposing and checking" (p. 111). Although research participants did not refer to themselves as risk managers or the hazards they deal with as risks, their reported behaviors and activities in school intersections fit the general steps in risk management (Brown, 1998, p. 79).

The hazards reported by research participants can also be classified into categories that are standard to the discipline of risk management. The standard categories of risks are those associated with the environment, with equipment and with people (Zenk and Leberman, 2001, p. 51). In fact categories of risk and steps in the risk management process are explored by Zenk and Leberman (p. 51). From this point on, I used the three categories of risk and the subcategories mentioned in the data as a framework replacing the procedure for axial coding described by Strauss and Corbin (1990, p. 96-115).

In terms of outdoor educators and the teacher supervisors who participated in this study, a systematic comparison (Strauss and Corbin, 1990, p. 87-90) revealed many similarities and a few important differences. To accomplish this comparison, I brainstormed some categories and then created Figure 19 on page 86. It contains comparative information from the literature on risk management in outdoor education, the school patrol program and the data collected in this study of teacher supervisors. The differences between them, mostly on issues of training and employment status are shown in italics.

Figure 19
Systematic Comparison of Working Conditions for Outdoor Educators and Patrol Teacher supervisors

Risk Management and Outdoor Educators	**Risk Management and Patrol Teacher Supervisors**
Goals Develop participants Fitness Environmental awareness Coping with risks	**Goals** Reduce road crossing risks for elementary school students Develop participants *Safety* Leadership development
Risks Environmental Natural world Weather Equipment (faulty, inappropriate, missing, canoes, paddles, life vests, climbing ropes, flares) People (level of experience, age, gender etc.)	**Risks** Environment Man made, roads, crosswalks, signs Weather Equipment: motor vehicles, bikes, skate boards, clothing, patroller vests and paddles, People (level of experience, age, gender etc.)
Risk Management Decisions Experience judgement Expectation to use RAMS Adventure Risk Assessment Model	**Risk Management Decisions** Experience, judgment, trial and error
Training *Formal training for OE (university degrees),* *Training on the job* *Certification/licensing* *Mentoring*	**Training** *Informal learning opportunities* *Watching patrollers* *Some dialogue with Regional coordinators* *Videos for patrollers* *May or many not be some knowledge transfer from previous Teacher's manuals on AMA Patrol website*
Employment Status ▪ *Compete for employment* ▪ *Participation voluntary* ▪ *Length of experience recognized*	**Employment Status** ▪ *Grade six teachers inherit role* ▪ *All students and teachers obliged to travel through intersections* ▪ *Varies between schools* ▪ No formal recognition for TS, just patrollers
Policy Government guidelines at Municipal, Provincial an National levels/parks National Parks Tourism Certification	**Policy** Responsibilities and liabilities spelled out in general literature applying to all teachers and extra or co-curricular activities Schools & school boards Requirement of school
Documents Standard Operating Procedures waiver forms (individual or from parents)	**Documents** Standard Operating Procedures Waiver forms (from parents) Teacher Supervisor Handbook

Summary

Fieldwork consisted of three phases over the course of two years. During that time, I considered four different types of methodology (p. 28-30). Kvale (1996) influenced the design and use of a semi-structured interview approach to conducting qualitative research interviews. And Berg suggested the idea of using the CLP framework as an interview schedule (1995, 32-33). A five-day qualitative data analysis course with Juliet Corbin and Strauss and Corbin (1990) influenced data analysis. Besides Internet literature searches, the technology utilized in this study included NVIVO qualitative data analysis software, custom electronic neighbourhood maps and scanning equipment for photos.

As anticipated by Alverman et al., (1996, p. 116), when the research interviews found the CLP partially implemented, the research questions shifted to a focus on research participants' existing roles. Data analysis involving use of open coding generated a theme of risk management in the data. And quantitative traffic monitoring data revealed the magnitude of research participants' responsibilities.

Literature on risk management among outdoor educators, especially Zenk and Leberman (2001), facilitated selective coding to verify of the theme of risk management in the data. This additional literature review also identified similarities between the work context of outdoor educators and the teacher supervisors who participated in this study. The methodology: qualitative interviews and data analysis chosen for this study of teacher supervisors also matches that used by Zenk and Leberman.

CHAPTER FOUR
RESEARCH FINDINGS

The results of this study exceeded the original objective to learn how six teacher supervisors view the proposed CLP, by creating a picture of the risks and risk management strategies they employ on a daily basis to ensure pedestrian safety at their schools. With one voice, Fran, Dorothy, Katherine, Charles and Ann stated the CLP is a positive program. As anticipated during the design of this study, research participants also provided valuable logistical advice on how to develop the CLP. The risk management stories of research participants explain why they view the CLP so positively.

As was the case with Thomson and Whelan's Drumchappel Project (1997) and Zenk and Leberman's (2001) study of outdoor educators, the results presented in this chapter represent, to the best of my knowledge, the first study of teachers who supervise the school safety patrol program. To check this statement, I searched the U.S. Transportation Research Board (TRB) database. Anything I've been interested in learning about professionally was done ten years ago in the U.S. All I found was a co-operative research project in Quebec that focused on employing youths to monitor bus boardings, behaviour on the bus and alightings (Societe' De L'Assurance Automobile du Quebec, 1992).

Organization

To help convey study results, I've followed suggestions made by Bogden and Biklen (1992) and Yin (1994). For example, I've structured the "multiple narratives…as separate… sections about each of the cases" (Yin, p. 134). Hence, the research results are organized in six sections: one for each school. And, each section contains "brief portraits of the research subject" (Bogden and Biklen, 1992, p. 120). Where possible, I have grouped the results pertaining to risk management under three headings: environmental risks, equipment risks and risks associated with people. To avoid duplication in the single case descriptions, I have

included results unique to each school and left out repeated findings. Common results that demand emphasis are contained in a final summary section "covering the cross-case analysis and results" (Yin, p. 134).

Reading the Results

Anyone reading the preceding chapters will know something about me and how I learned about research. The reader also has the advantage of familiarity with the *lens* of risk management that influenced my interpretation of the data and the findings related in this chapter. It's important for the reader to know, however, that as neophyte researcher I collected the data without such knowledge. Plus, I am not a teacher, and there was long gap of years between the last time I was in a school and the outset of fieldwork for this study. Prior to data collection, I was aware of current knowledge of the research on children's abilities as road users. So that influenced my questions and probes. But, I had not yet read the literature on risk management.

Hence, the excerpts from transcripts that I used to unfold the story research participants told in the following pages of this chapter may not *seem* very profound or dramatic even to research participants. After all, they spend 181 days a year in the world they described to me. The quoted responses I've used to capture results, may seem more notable if one assumes the perspective of a new grade six teacher, a parent of an elementary school child or the parent of a new patroller. Another way of appreciating the results reported in this chapter is to use Strauss and Corbin's flip-flop technique (1990, p. 84). Look for the risks implied in research participants' descriptions of their risk management activities.

The Journey

The journey may not only lead to new knowledge; the traveller might change as well (Kvale,1996, p. 4)

Some comments about how this study changed me are warranted before presenting the results. When I first read the statistics on traffic injuries and fatalities in Mission Possible in

1996, I stopped jaywalking. I also quashed the temptation to drive just over the speed limit when pressed. When I find myself feeling impatient while driving, I take deep breaths. For a couple of years, I cringed at long-weekend injury and fatality reports. Now I feel fine about *not* having travel plans for long weekends. I'm a little desensitized about the statistics now, except when children are involved.

Brown (1998) anticipates public outrage when children are the victims of failed risk management. But, I believe the true impact of such incidents on surviving family members can only be understood first hand. That's who we feel for when such tragedies occur. Unfortunately, a couple of weeks before meeting with the AMA to confirm the topic and research participants for this study, I became a grieving relative

Late at night on a rainy road in British Columbia's Fraser Valley, my nephew made some poor decisions. My sister found out at 4:00 a.m. that morning when the police called to say that my nephew was in the acute-care ward of Vancouver General Hospital. The same day, she called me and my siblings. Immediately, we all went to work comforting my sister and making life easier for her family. Then we *hoped.* But 2 weeks later, just 3 days before he turned 21, ready to enter his young adult life as a certified Novell Engineer at the top of his class, we lost him.

Ten months later, when I collected the data, this incident was not top of mind for me. I was more concerned about my skill level as an interviewer. But, it turned out that I was well aware of the emotional losses that research participants fear. Suffice it to say, that on occasion, when I see an unrestrained toddler near a busy road, or hear a friend talk about their children's driving habits, I don't hesitate to tap the parent on the shoulder. When I'm in a vehicle, I'm like a teacher supervisor watching patrollers: nothing happens.

School One

We're going to need maps—Fran

Unlike the other individuals interviewed for this study, Fran is not a teacher. Her main responsibility is being a teacher's aide for a learning disabled child, and she has a rich professional background. Before coming to this school, she "…worked for Child Welfare for about six years, then with foster children in families all over the [City], with young offenders, people who were chronically ill and dying, and with children and adults that were autistic." In terms of hobbies, she stated "I take Kung Fu lessons. I also study French."

Just in terms of the buildings, school one appears to be in the most affluent residential neighborhood of all the schools in the study. The homes are large ranchers, some with two stories and double garages. The house lots are large with well-maintained lawns, curbs and sidewalks. The school building itself is quite modest. It is situated at the east side of a large playground. Right next door is a daycare and after school care facility.

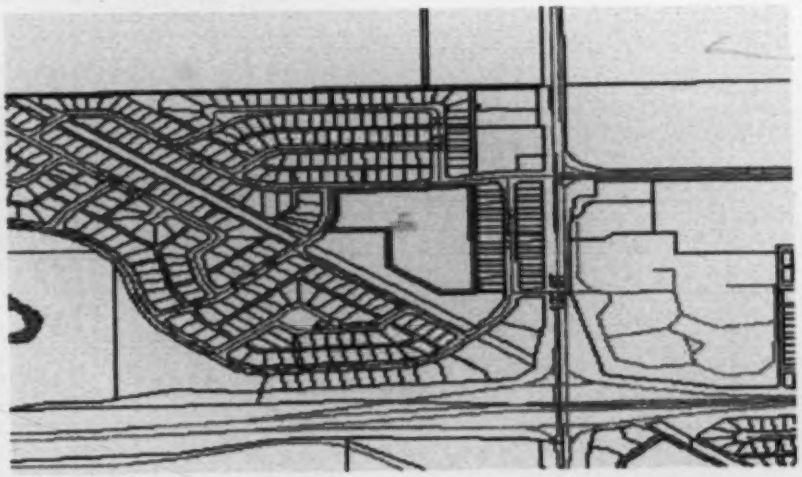
Fran reflects on the type of vehicles and pedestrians she sees while monitoring the school intersection. "Well, there's the local people that live here that pass, that pass through. There are delivery trucks. There are buses. There's .... cars. People on bicycles, on foot, on roadways, children ..... every, every age group. People that work in the school. People that work at [a local grocery store]. So, there's, there's quite, a diverse mixture of people that, that go past the school."

The Parent Community

Of the community league and parents, Fran describes their relationship to the school in very positive terms. "So, we're involved very much within the community. And…almost like the hub of the community. The school is, it's like everything sort of revolves around the school, what goes on here. I've worked in other schools and I would say that this school rates extremely high with parent involvement, extremely high. I'll give you an example. I'm just

writing out, doing volunteer invitations, and I have to send out 88 invitations for volunteers, and these are separate invitations." "I also think, in the community, …if a patroller is late for a crosswalk, I hear from the community."

Figure 20
School 1 Neighborhood Map
Source: City of Edmonton, (2002)



Views on the Community Leadership Program

Patroller Presentations

Fran, relates that patrollers already address school assemblies to help garner cooperation from other students' Skimming through a hard copy of the CLP goals as if they were a checklist, she responded to the prospect of patrollers delivering presentations to other students and at school assemblies by saying, "That's fine. They do that already."

The long-term community leadership goal of developing media campaigns for patrollers to deliver held some promise for Fran as a means of educating parents and other adults who don't seem to understand safety rules.

> I see these little ads on TV and there may be 30 minute blurbs… And it would be really helpful for them to have this type of education that's accessible to them just through the TV, or on the radio. This is how you… teach your children to cross the street. This is where the dangers that lurk on the road.

We also discussed the use of media at the school. Researcher: "What about the idea…do you have the patrollers on the public address (P.A) system occasionally? Giving announcements in the morning?" Fran: "Well, yes, they probably do…but [as grade six's not as patrollers]. Wonderful. I think that's a great idea."

Cross Age Tutoring

At school one, there are a number of opportunities for patrollers to educate other students. "There's certainly role modeling going on for the smaller children in the school because the patrols are the older more responsibility." Assemblies are held at the beginning of the school year, monthly, and at end of school year. As part of a work experience program at school one, junior high school students tutor all ages of children. And partnerships with a local grocery store offer opportunities to take traffic safety messages beyond the school grounds and into the surrounding community. These existing activities may serve as vehicles for traffic safety messages.

School Safety Audits

Moving on to the third community leadership goal "training and equipping patrollers to conduct neighborhood safety audits." Fran did some thinking out loud and suggested a barrier to developing this phase of the Community Leadership program. "That would require, you know, doing some, some type of workshops, and teaching them, like, we'd have to look at the whole community. We'd have to have maps, and it would really be quite labor intensive." She raised the issue of time as a barrier to achieving this goal. "You know, it could be done. It would be a great thing to do if one had the time to do it, but we don't have time."

Risk Management

Environmental Risks

Fran oversees more or less than 418 elementary student crossings each day. Over the course of the school year (181 days) that means that Fran and her 25 patrollers are responsible for 75,658 pedestrian crossings per year. Keep in mind that the developmental capacity of two thirds of elementary school students is limited. Plus, data from municipal records states that an average of 3300 cars per day and half a million per school year travel through the intersection in front of school one.

Table 9
Traffic Volume at School 1

School Pop.	crossings per day/year	Vehicles Per day/ per school year	Patrols	X-walks Patrolled	School Bus? Transit Bus?
209	418/75,658	3300/597 000	25	2	SB &TB

Risks Associated with Equipment

In her instructions to patrollers, Fran referred to the risks posed by buses. "Buses pull up and people get on and off the bus, and the patrollers have to be aware that [the bus is] blocking [their] view, and they have to hold the children back until their, their view is clear, their vision is clear. They've been told that 'they should really make eye contact with any driver of any vehicle so that [the driver] is aware that the patrollers are there, and that they do have children there [waiting]' They're to make eye contact, and 'don't let anything happen until that bus pulls away…."

Speeding Vehicles

While suggesting a general need for motorists to comply with safe pedestrian crossing practices, Fran also implied that speeding is a risk for her. She also believes the patrol is a bit

of a deterrent: "You know, if they don't see patrol, they probably don't even think about it as being a school zone, they just whip right through." In other words, speeding vehicles are a risk, and the presence of the patrol helps manage this risk by reminding vehicle operators to slow down.

Risks Associated with People

Motivation for Weary Patrollers

Fran believes the CLP program represents a way to address boredom among patrollers. "By the time they get to grade six, it's [patroller routines] really starting to become weary. If there is a, a more enhanced role for patrollers, if the public is, is made more aware, I'm certain that the kids would, would feel a lot more motivated. Like, they're really motivated during the first few patrols, and we get this when they're very young. And then by the time they get to grade six, it's really starting to become weary."

Bullying

Though all the teacher supervisors mentioned that patrollers get bullied, I happened to be present when a powerful incident of bullying occurred. Fran and I arranged to meet just after school let out. We had just seated ourselves inside in a spare room off the school reception area, when a male patroller about three feet tall with jet-black hair ran into the main office. 'Mrs. Rose…! Mrs. Rose…!" Fran looked at me, grimaced and left to find out what was going on. The next thing I heard her say was "That's assault!" I'm calling the police."

When she returned in a few moments, I offered to reschedule our meeting. Feeling shocked, as I packed up to go, I asked: "I thought this neighborhood would be safe?" Her response was "No place is safe anymore." At my next meeting with Fran, I heard the rest of the story. A junior high school student had arrived at the crosswalk on a bike, kicked the patroller on a bandaged area of his leg and took his sign away from him. Between the school staff, the patroller and the police they identified the bully and "dealt with it."

Parental Non-Compliance

Fran did some thinking out loud about the impact of parental non-compliance. "It stimulates my imagination, when you say something like 'some parents don't understand how to teach their children about safety.' We have a lot of people in this community, and this school, …they don't really understand the rules …as far as safety goes. There are people in this country, in this community that probably don't even think to teach a child…there's an assumption that, oh they should know. Well, maybe they don't." We laughed about this, and Fran went on to say: "Maybe they don't know. And we all need to learn, and we all need to be aware."

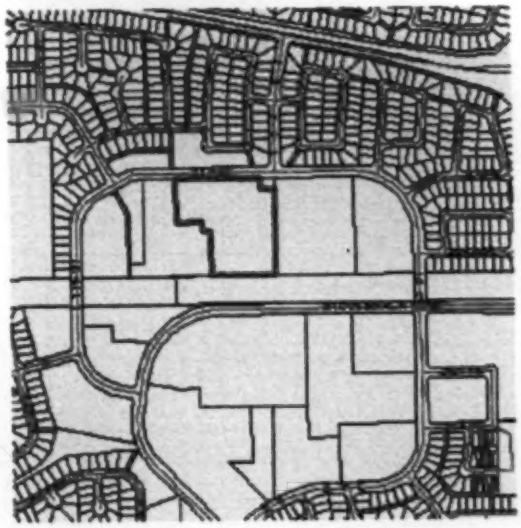
School Two

And I guess to me its. Maybe coming form a physical education program. Where injuries can occur so easily—Dorothy.

School two is located on the north side of an extensive park-like schoolyard. Apartments and small single dwellings surround the schoolyard. Compared to the neighborhood surrounding school one, the neighborhood around school two appears to be less affluent.

Inside the building, opposite the principal's office where I interviewed Dorothy, there is a display case showing the history of the site where the school was built. One photo shows an aboriginal community with Tee Pees. Even then there were few trees around. Another shows farmland with a few animals and another a few houses being built. School two looks like it was built in the middle of the farm field shown in these early scenes. The trees that appear surrounding the field in the early photos are gone: replaced by apartment buildings, duplexes and the road that encircles the schoolyard.

Figure 21
School Two Neighborhood Map
Source: City of Edmonton (2002).



Like Fran at school one, Dorothy has a long career behind her: 23 years as a teacher. She has been the principal of school two for three years and assistant principal for five years before that at a different school. She is a trim, blond woman in her 50s. Besides responsibilities as principal at school two, Dorothy is the president of the Public School Administrators Association. Dorothy rates the school council as "excellent," and focused her comments on her current safety oriented activities. They dovetail nicely with the goals of the community leadership program.

Shared Roles

Dorothy's systematic surveillance is possible because she herself doesn't have classroom duties first thing in the morning. Hence she is fully available, at least in the morning, to monitor traffic outside the school: something most teacher supervisors can do only sporadically. Furthermore, she has formalized this role: "What has evolved since I came here is, I feel it is really important to be out there in the morning and greeting the kids. So, that

part of the [traditional grade six teacher's] role has been assumed by me especially in the mornings."

Splitting the duties in this way allows the grade six teacher, who is normally the patrol teacher supervisor, to attend to her class first thing in the morning and do the paper work. "She has been doing the patrol for years. So, she is the person who "makes the schedule [and] visits the AMA person who [does] the training and testing. The permission slips, the parents are aware if the child is going to take on this role. These are what the expectations [of patrollers] are. She handles all of that."

The risks at school two are similar to those at other schools where participants in this study work. What is different at school two is how Dorothy maintains a continued presence at the street in front of the school and has mobilized her staff and patrollers to help with the job. The term *systematic surveillance* comes to mind when I think of Dorothy and the steps she takes to monitor school safety. Other research participants are out there a few times a week: more often at the start of the year. But Dorothy is out every day.

Views on the CLP

No Barriers

Not surprisingly, Dorothy does not see any barriers to developing the community leadership program. For example, as part of their support of the "safe and caring schools policy," the school council managed to attract over 200 community guests. Dorothy ensured that adults without any affiliation to the school were included in the invitations to this event. When questioned about her interest in the greater community, she replied "They are part of our community, whether they are parents, were parents or are members of the community. The more they know what we are doing, then more they will learn what they are doing themselves."

Safety Audit

Dorothy is way ahead of the game on the safety audit component of the CLP. She commissioned one in 1995 (Dorothy, Personal Communication, Facsimile, January 1998). The document contains 12 pages. The front section lists of 72 risks identified at the school, in which 17 are related to traffic. The final section of this document assigns risks into zones, with matches risk management procedures.

Risk Management

Environmental Risks

Traffic Volume

Traffic volume is a factor that Dorothy has little control over. "We have a lot of people travelling through here. It is actually, a busy, busy road. For many who live west and slightly south, coming around here provides an access to the freeway. So it is a very busy road, not only for people who are dropping children off, but also for people who are going to work." …we have a lot of trucks go buy as well. Not the great big ones, but we get a lot of the 3/4 ton trucks, camper vans. Mostly single, but on occasion, the people who are working in the community on roadwork or landscaping will be through with their commercial vehicles.

As with school one, the school population and municipal data quantify the traffic volume that Dorothy refers to as *busy*. School two has a slightly lower traffic volume than school one.

Table 10
Traffic Volume at School 2

School Population	Student crossings day/year	Traffic Volume Day/year	Partrollers	x-walks
271	542/98 102	2200/398 200	25	1

Risks Associated with People

Speeding Motorists

Even with all these precautions, Dorothy admits that there is little she can do to stop drivers from speeding by the school. This issue sparked the most passionate comment Dorothy made over the course of the whole interview. When asked what the Alberta Motor Association might do to support school traffic safety, she remarked: "I think the AMA should take on not only the pedestrian safety, but vehicle safety. We have people who fly through here. And you have a school zone! Let's go 40 km, or less. It's the issue of speed and traffic safety and stopping at the stop sign, not just the 'Montreal stop,' which is a second and then you go."

Buses

Because Dorothy is always monitoring school traffic in the morning, she can pay attention to ongoing concerns such as children alighting from the buses. "We have a number of school buses that come by. Not necessarily coming to our school, but picking other children up for the specialty sites as well. We have three buses that do come to our school. They drop children off for the special needs programs. And then we also have one day care in the area that drives its kids in a school bus." To monitor those arrivals, she reports being "out there every morning, partly because I meet the school busses and make sure the kids are coming off the school buses in a safe manner."

Her strategy for managing risks around children alighting from buses allows her to monitor patrollers and the behavior of other school children. "I'm out there to ensure that the crosswalk patrols are watching carefully, that the students crossing are also walking and not running and [That] children come off their bicycles [before they enter the crosswalk]." Like Katherine at school 3, Dorothy states "If I'm out there, nothing happens."

Parental Non-compliance

Continual monitoring by Dorothy and other teachers makes it feasible for patrollers at school two who already practice "a bit of an expanded role." "There is always somebody who

either tries to stop [their car] in the middle of the crosswalk to drop their children off." So, "[patrollers] play a role in our school ensuring the parents are parking properly. That they are not stopping in the middle of the street and dropping their children off." For example, patrollers will make the suggestion, "Good morning, could you help us out by stopping just ahead there?" "We have children crossing to and from safely here! You 're not allowed to park here, you can drop your child off half a block up at the curb." For good measure, patrollers also have the authority to say something if they see a driver not wearing a seat belt.

According to Dorothy, community members " are very positive about this. The students are really good with them. "We have reached the point where the parents obey them as well. Because initially, you will get a number of people who park part way down the street and will try to jaywalk instead of bringing the children down to the crosswalk. The kids themselves say 'I can't cross here Mom and Dad. I have to go to the crosswalk.' The kids are training the parents more than the parents are training the children." Dorothy is out there every morning sanctioning the highly assertive role of patrollers at school two.

School Three

School three is at the lower south edge of a sloping park. At the top of the park is another elementary school. All around the park are apartment buildings and townhouses. From the front of the school, also looking south, it is possible to see a busy intersection with a traffic light about one block away.

Outside and inside at this school, the atmosphere is happy and bustling. The general office is more like the main reception area in an office. A nicely dressed, slim blond teacher with a 40's bob hairstyle greeted me and paged my participant. After a few minutes, the receptionist allowed me to enter an adjacent office where the interview was to take place. To my left, as I entered this office, the wall above waist height was clear glass. The secretary's desk in the general office was positioned so that she could see into this adjacent room where I was waiting.

Learning to be a Teacher Supervisor

Of her own work history, Katherine offered, "Well, when I first came here. It was my first position as an elementary teacher. I've been here for three years. Before that I taught at High school and Jr. Highs. When I first came here, I observed the... I taught grade fours and sixes. Normally the grade sixes' were the patrols. I spent the first year just kind of observing the patrol. Then the next year. I said... I'll handle the patrol. I can do that. So, I took over that. And have been doing it ever since." When asked about hobbies, Katherine said "No. I am a full time teacher and mother. The kids keep me pretty busy, my own and the ones I teach. So, no."

Teacher Supervisor Role

Assuming the role of teacher supervisor for the patrol goes with the grade six job, however at school three, Katherine has switched from teaching grade six to grade five

> It's not like there was a burning desire to enter traffic... teaching or anything like that. It's just a job that had to be done, and I thought well, it is pretty logical for the grade six teacher to do the school patrol. But [pause] actually it has switched because I have not been teaching grade sixes for several years now. I'm teaching grade five now and the grade sixes are the patrol. And that's a little bit of a nuisance…because you don't have as much contact with the grade sixes when you don't see them every day.

Environmental Risks

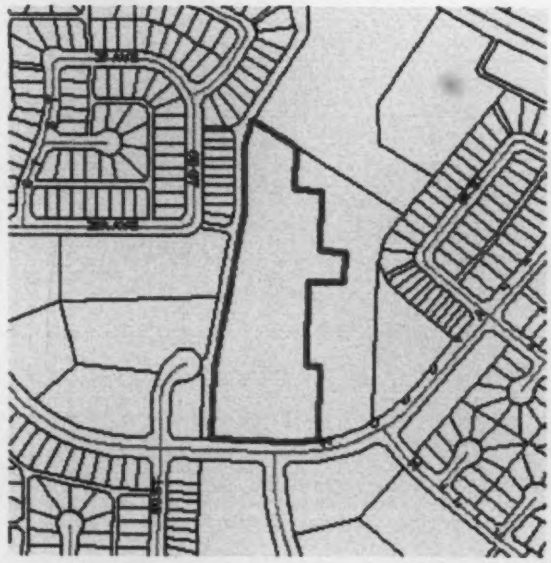
Positioning Patrollers

My conversation with Katherine regarding the interactions at the crosswalk offers a good example of how teacher supervisors identify risks and try to minimize them. At this interview, I started drawing an intersection on a scrap of paper, but soon let her do it. Even so, the resulting sketch was pretty useless as data. As mentioned earlier when the term *busy* led to the discovery of municipal traffic volume data, Katherine's attempt to re-route pedestrian traffic compelled the discovery of neighborhood maps.

The map for school three makes the Katherine's comments more understandable.

> We used to have two crossings, and that is where we used our four patrols. We used to have the patrollers at different spots....we have the park here so the kids who live over here don't really want to walk all the way down to the crosswalk and then back to the park. We have tried to centralize... and we did it very consciously getting it out to the community and school newsletters. Trying to encourage everybody to walk to the school and cross here (points to a section of the road) rather than trying to cut earlier a block or two ahead. So we are trying to get all our walking traffic down to these crosswalks... But it is working...It's working much better than it has before.

Figure 22
School 3 Neighborhood Map
Source: City of Edmonton



No Crosswalk

Katherine then revealed something that was a little difficult for me to grasp right away.

Researcher: Is there a light or just stop signs?

Interviewee: Just stop signs, Yes.

Interviewer: Is the crosswalk here?

Lori: We don't have a crosswalk

Interviewer: Oh, You don't.

Lori: No, we don't ..(pause) have a crosswalk.

Researcher: So, you don't have one painted on the road.

Interviewee: No, (pause) we don't.

Traffic Volume

"Back to your question about traffic, we have the regular parent traffic parent drop off. Oh here's what makes it busy, we have a transit a bus stop right outside the door. A regular ETS bus. That makes it busy. Not only that, but the past couple of years now we've also had yellow school buses dropping some of our opportunity [special needs] students off. Which makes it busy."

> Yes, so. So you've got, community people not associated with the school waiting for their bus to stop here, and you have parents driving in here trying to quickly drop their child off and run into the school. And [vehicle operators] are actually turning right in, they are actually turning where the kids are crossing. And you have patrollers trying to keep their visibility. Then you've got the yellow school buses pulling up. And it all seems to happen at the same time. So some mornings at 8:30 it is a very, very busy place...and a little nerve wrecking for the patrols. …the other thing is this actual street is a very good access to the hospital and the mall.

Table 11
Traffic Volume at School 3
Source: City of Edmonton (2002)

	School Pop.	crossings day/year	Traffic Vol Day/year	Patrols	x-walks
K-6	206	412/ 745 72	2900/ 524 900	25-30	na

Risks Associated with People

Patroller Security

Katherine encourages the affinity between students and patrollers. "This year we took pictures of all the patrols and put them on the bulletin board. Because a lot of times, especially the younger kids they really look forward to certain days of crossing with a certain patrol. They do. [With a smile], they almost get a little relationship with that patrol. It's nice....[laughter] And they can look at the picture and "Oh, look...That's the one I like..." (Laughs). Yeah!"

Sadly, she has had to adapt this practice a bit due to concerns about the personal security of patrollers. "I would be sure to blacken out their last names and things like that. Just for security sake." Interviewer: "OK just so that nobody knows when they are going to be there?" Katherine, "No, no. Just if some person comes in whom is not connected with the school. We have to watch a little bit. So that last names are not published. Just first names."

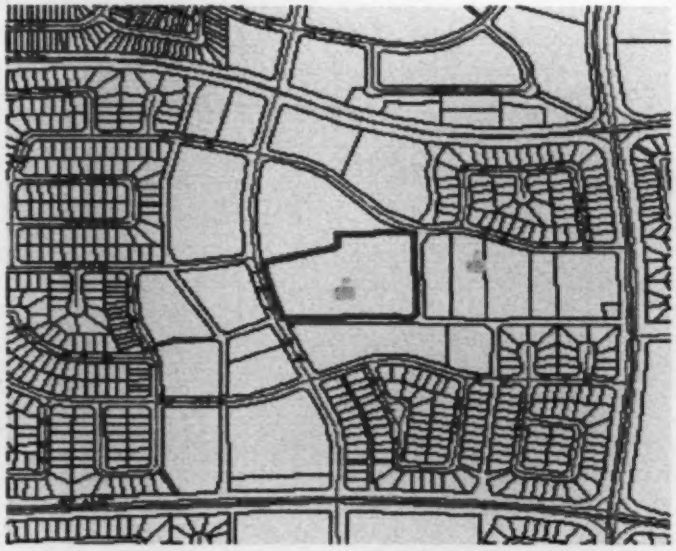
School Four

School four is located in a west-central neighborhood. It is situated on the west side of a school-yard that takes up a square city block. Mature trees shade the boulevards and houses on the surrounding streets. Houses and yards are well cared for, though not as large as

those in the neighborhood surrounding school one. In terms of apparent affluence, this neighborhood would rank second, behind school one.

Charles is the only male teacher interviewed for this study. He is young, slim and has five years of teaching experience that includes work with children in special education programs. When asked about volunteer work, his response was "not involved in highly organized ones. You know, I belong to a West Edmonton Christian Assembly, you know, and we, baseball and hockey and things like that, yeah." Charles currently teaches a split grade 5-6 class, and is transferring to another school in the fall. It is located close to where he now lives.

Figure 23
School 4 Neighborhood Map
Source: City of Edmonton, 2002



Charles didn't offer any glowing reports of the parent advisory council or parents at all. "Yeah....We have the parent advisory committee." The fact that many children have

stay-at-home Moms came out when we spoke about parent's involvement in school assemblies. He thinks they would "absolutely" participate in a presentation by patrollers.

Views on the CLP

Role Play

Charles: There's been cases where the patrollers have indicated that it's not safe to cross, and the parents have just gone anyway or jaywalked. And they come to me and that puts us in a difficult position. I mean we can't chew the parents out.

Interviewer: No, I guess not. Say that you had an assembly and some time for the patrollers to present. Do you have any ideas about how you could make that, you know, interactive for parents?

Charles: Yeah, I would incorporate parents into the presentation….I have a scenario running through my head where I would make this mock crosswalk…and a parent coming up with a kid, and not paying attention to the patrols. And then, you know, have somebody pretend they're driving a car and screech the brakes, and scream out the window 'hey watch where you're going.' Just to emphasize that parents need to follow.

Interviewer: I was thinking a little bit of reverse role play, where the parents are the patrols, and the patrols played the adults.

Charles: Yeah, that would work really well too. The kids would love that.

Role in the CLP

My comment about the potential influence Charles has as a teacher supervisor electrified him.

> *Charles:* Because, I mean, it's something I really like to do, like, you know, or would really like to do, and I, sitting here talking with you I think that there's some really neat things we can do in the school that I'm going to. I live in the community that I'm going to be teaching, so I think this is really something that, you know, like because I live in that community, I'm familiar with the community, I'm familiar with the

businesses that go there, and I mean, there's chances for, so I'd like to take this into that school. I don't know, and I don't want to step on anybody's toes. I don't know if anybody's running the program there right now.

Magnitude of Responsibility

Charles summarized his thoughts about potential risks in this way: "You know, I think it's important for the AMA to realize, and for other people to realize is that this is a huge responsibility. I would not want to be a patrol supervisor the day that a child is hit, or something bad happens, you know. And, so I guess, you know, anything that they can do to make it easier, to lessen the burden."

Risk Management

Environmental Risks

Charles describes traffic here in the following manner. "It's pretty heavy. ETS uses it as a bus route…the volume of traffic is quite steady and quite constant in the morning hours, and again after school. So, I mean, the patrollers that are stationed here have quite a responsibility and quite often are surrounded by moving vehicles, and little kids. Yeah, school bus, yeah, school buses. A lot of, just residential vehicular traffic, just lots of it. It's a pretty, pretty major road."

Table 12
School 4
Source: City of Edmonton (2002)

School Population	Crossings day/year	Traffic Day/year	Patrollers	x-walks
320	640/115,840	3310/599 110	22	2

Real versus Perceived Risks

Charles got a little testy when I relayed my resolution as a researcher that "from a statistical point of view, getting involved with an enhanced program is not going, it's not going to further the traffic safety discipline's bottom line in terms of reducing injuries." He had this to say:

> I think that, people who feel that this isn't important to do because nothing has happened yet are generally reactive people. Like, you know, we need to take a pro-active stance and say, okay, great, we're glad that nothing has happened. We need to maintain that, and how do we do that? And I think this [the community leadership program] is a good way to do that 'cause we've had a number of near misses, half a dozen out here. I had a kid that was clipped, you know, so.

A little later in our discussion, I asked a probing question, about contact with police. This yielded a story that elicited a "felt understanding," on my part of what the teacher supervisors at schools one through through three had been telling me about the magnitude of their responsibilities.

Interviewer: Okay. What about the police? Do you have any interaction with the police as a result of the patrol?

Charles: Well, just when a car runs the stop sign, or there's a near miss, or if a kid is hit.
(Silence)

Interviewer: Has anything like that happened?

Charles: Last year we had a kid hit, yeah. It wasn't related to the school patrol. She was hit down the street. She, she was running across the street and a car hit her.

(Silence)

Interviewer: Oh, my. Serious? [Should I or should I not probe?]

Charles: Yeah, very serious, she almost died. She's got brain damage.
(Pause)

Interviewer: Oh, my. …Mid block dash?

Charles: Pardon me?

Interviewer: Mid block dash.

Charles: Yeah, you know, and just not paying attention, and wanted to cross the street to play with her friends and, like, I don't know the full details of the accident, but she was very badly hurt.

Interviewer: We know that when there's patrols it just hasn't happened.

Charles: Yeah, yet.

School Five

In the neighborhood around school five, the houses are small and extremely well cared for. Lawns and boulevards and gardens are impeccable. The school itself has recently been painted. It seems really small, like the size of concession facilities at city parks. Inside, there is an atmosphere of calm, and the halls are highly polished. The school is situated in the in the northwest corner of the city and in the middle of a city block facing south. It was a really hot day, and she managed to find me a glass of water.

Helen has nine years of teaching experience and three and year's experience in her present position with grade sixes. She has a 17-month-old daughter and her husband works shifts. "When I'm not at school full time, I want to be with my little girl…we attend swimming lessons…not so much for myself right now…The gym. I go to the gym."

Community Relations

Helen's contribution to managing the patrol includes building and maintaining rapport with parents, former students and patrols. She describes the "[Parent-School Association] and the school council" as extremely supportive. Of her relationship with the community, Helen reported "I'm quite familiar with the community, and the kids in the community, and the parents."

Further evidence of this mutual respect is Helen's rapport with former students. While other teacher supervisors report that the patrol has trouble with bullying from Jr. High's, Helen reported "Actually junior highs have a tendency to leave them alone. The nice part is,

even the kids who live in the community, I've taught with in the last two years, that they're actually pretty good, like, they still come back to see me."

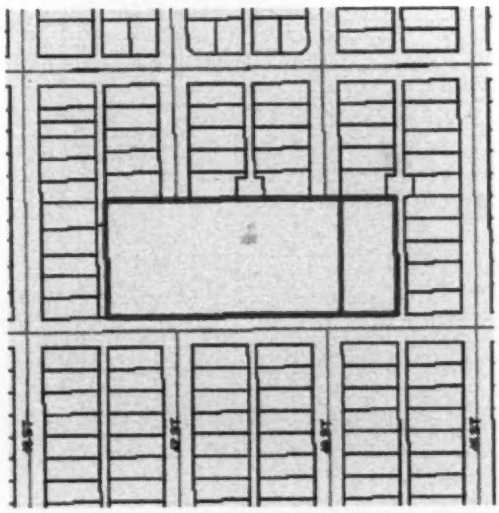
It's no wonder they come back given the support she offers support for patrollers over the course of the year and the concern she has for their development.

> I do have meetings in my classroom, monthly meetings, and we, all the kids who, for example, have done a really good job, we've talked about the problems we've had, who's, and this is where we talk about the repeat offenders, and everything. If somebody's having difficulty being on time we kind of, you know, go over expectations once again, and then we have a draw for the patroller of the month, and we eat lunch together, and just kind of hang out. It's really kind of a nice thing.

Interviewer: Were you a patrol when you were in school?

Helen: Yes, I was! Of course I was. Can you tell?

Figure 24
School 5 Neighborhood map
Source (City of Edmonton, 2002)



Opportunities to Develop the CLP

Helen would like the patrol program to give something back to patrollers, and thinks the CLP might help do that. "I'd like them I just wish they'd go away with, you know what, that was a really positive, rewarding experience. Some of the kids will, but if you ask them, in the majority of the cases, [they'd] say 'No', 'but I made a promise and I stuck it out 'cause Mrs. Dale told me I had to.'"

Brainstorming with Helen generated very useful logistics for developing presentations and involving other community members. When I asked her about cross-age activities between junior high students, and patrollers and reminded her of her ongoing contact with junior high students, she replied "Yeah, that would be very easy to do. It would have to be after school, or at a, during a lunch hour. Maybe to free up a little bit of time, let's say, at a lunch hour. Maybe a lunch hour where they might be excused a few minutes early so they could get here, spend the lunch hour, and maybe be excused for part of their first class, that kind of thing."

Having thought about it more, she suggested

> Actually, if I had to anything, I'd probably strike up a club. Like a safety club, or some, of some kind, I think. And like, for example, one week we might make posters, or one month we might work on posters with some slogans and things that we could put up in the community and the school. We could do some writing. We might even do some art of some kind, like, try and do something like that in the form of a club, and we could address the different kinds of safety for school and community events,

Helen would "Start within our own school, I believe, and sure, any other school that might not have patrols." 'I guess you don't know until you do it.'

Links with a Hospital

Helen went on to say

> Another thing that I was also thinking of, one of my mom's here at The school works at the Glenrose Hospital doing rehab...we did some talking at the patrol picnic and she thinks she might be able to get some sponsors, so I want to have, like, contests, like, kids who are going to wear helmets. She could come and talk, even, I mean, there's all kinds of things we could do. She's really, she's even, I would imagine, like I said, we'd have no problem even getting a little bit of funding, or something so support some prizes or something here at the school.

Curriculum Fits

Helen sees a fit between the community leadership program and the pro-social skills/character education initiative. She stated this initiative is "going to take about three years. And we're looking at developing some services projects, so that would really lend itself well to grade sixes. For example there's room in that, in that program I would imagine to 'cause one of the values that we're taking look at is reliability, responsibility so if there was something that we needed to do with the other school, we needed 40 minutes within the curriculum to do it, there it is.

Risk Management

Environmental Risks

Because school five is in an older part of the city, the streets and avenues are in a straight grid pattern. By travelling in on the avenue in front of the school, drivers can access a freeway to the northwest and a major shopping center and schools to the east. Hence, the avenue in front of Helen's school has the highest traffic volume of all six schools: 6700 vehicles per day.

Table 13
School Five
Source: City of Edmonton, 2002.

School Population	Student crossings day/year	Traffic Volume *Day/year	Patrollers	x-walks
210	420/74 160	5500/995 500	22	2

Bored and Cold

Besides having to follow procedures to guide 210 children back and forth through busy traffic every day, patrollers have to put up with some discomforts. Helen manages the potential risk of patrollers dropping out by advising new recruits of the day-to-day discomforts. "I basically do the scared straight thing. It's not a fun job. Sometimes it's boring. Sometimes it's really, really cold and you freeze your but off. Sometimes it's really, really warm and you're sweating. I make it sound as horrible as I possibly can…I need committed kids."

Risks Associated with People

Besides the physical discomforts of a boring job and seasonal weather, patroller's face potential conflicts with adults. "It worries me, and you know, and, you know, they're, like, they're just trying to do their jobs, but I tell them, you don't answer back, you don't say anything because you don't know if that person is, you know, can say something like that is that .. you can't predict that person's behavior. If you say something, is it going to light that person's fire and they're going to get out of the vehicle and say something or do something to you. Just ignore." Reflecting more on her concerns about motorists she states, "…these drivers, and some of the unsafe driving practices that I have seen, like the 'Uies' right when kids are crossing, and it's crazy."

School Six

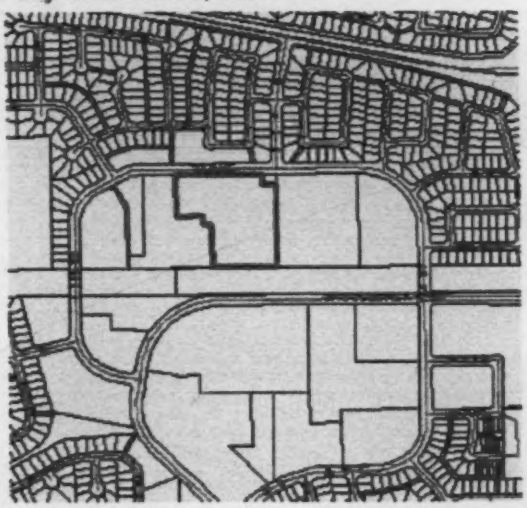
Ann is an attractive, petite newlywed in her early 20s. I interviewed her in the home of her in-laws, where she and her husband are staying until their new home is built. It is a lovely new home on the north side of the city, surrounded by others just as nice. There is a remarkable new church close by. When I interviewed her, the school year had just ended.

A subsequent visit to the school where Ann supervised the patrol for the last ten months revealed that the neighbourhood is more run-down than is the case with schools one through five. Elementary school classrooms are actually a series of four trailers joined together by a passageway structure to a fairly old central brick building that is two stories high. The road is in poor repair and so are the buildings near the school: paint peeling off fences, houses that are very small and in disrepair, an old hall that is boarded up and lawns overgrown and unkempt. One block south of the crosswalk is a small one-story strip-mall with some medical offices in it. Two blocks south is a disreputable and shabby hotel.

The local health authority is addressing some social needs at this school by piloting an "Aim High" program, where illnesses at school are used as opportunities for community health education. There's also a Head Start program at this school and a program for special needs children who are bussed in. Ann also stated that the community league makes efforts to foster pride in the appearance of the community by sponsoring spring clean up campaigns, holding a follow-up barbecue, and planting bedding plants and paying Jr. High students to maintain them.

The enhanced program wasn't top of mind for Ann, but she recognized the copy of the goals when I showed it to her. She has five years of teaching experience: some substitute teaching and most recently two years at her current school. Like some of the other teachers I interviewed, she inherited the job of supervising the patrol when she took the job as a grade sixes teacher. Like Helen at school five, Ann was a patroller herself when she was in grade five and six. Soccer is one of her hobbies.

Figure 25
School 6
Source: City of Edmonton, 2002



The lack of apparent prosperity in the buildings surrounding this school, as Dorothy suggests, makes it an inner city school with little involvement by parents.

> If there's a special event, parents would be [encouraged to] be involved in some way…to sort of ease these barriers of the school 'cause a lot of the school, the community, you know, they've had a bad experience with school, so aren't involved. There was one instance where it was a grade one skit, so of course all the parents wanted to come and see. … They (school administrators) are trying to make the school more like a base, I guess, a community center. As far as the parent advisory council....We have one…unfortunately it's the committed few. We have to have the core parent advisory committee, and each grade is supposed to have a, sort of, a home room representative. I don't even know mine was.

Opportunities for the CLP

The only unique data on opportunities to develop the community leadership program contained in Ann's interview focuses on cross-age tutoring. Because enrollment at school six is quite small and includes kindergarten to grade nine, there are quite a few split classes. This

suggests opportunities for cross-age tutoring and a chance to include 13-15 year-old junior-high students.

Environmental Risks

Traffic Volume

Traffic volume is not remarkable, and the intersection at school sixes has traffic lights and painted crosswalks. Parent parking and dropping kids off isn't a problem either. The bus route does serve a busy Light Rapid Transit (LRT) Center (4000+ boardings in the A.M. peak), but most of the children walk or arrive on school buses.

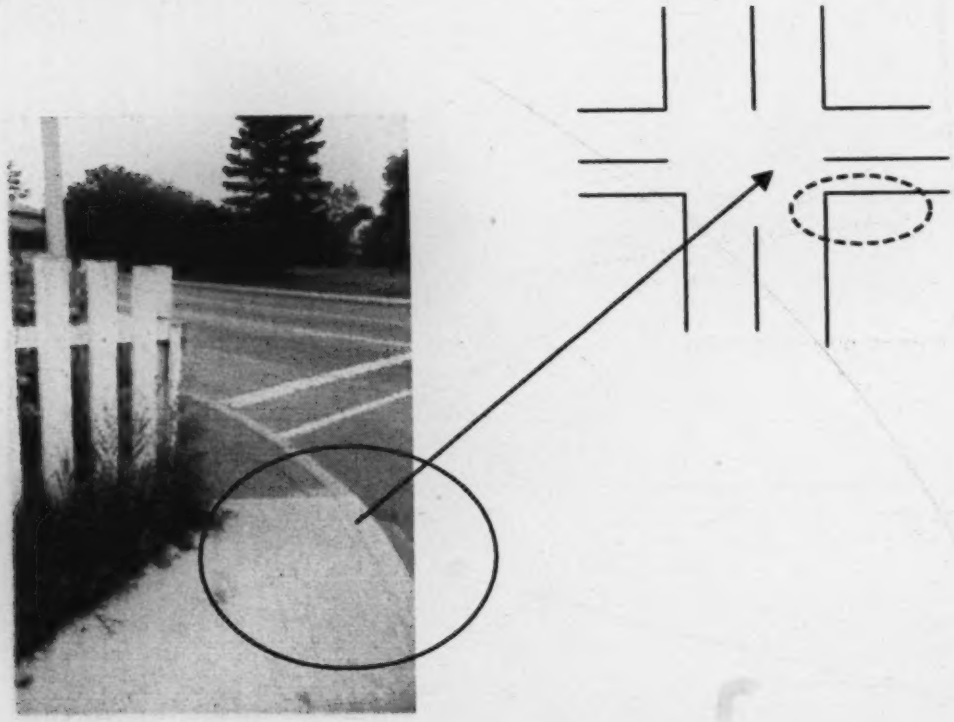
Table 14
School 6 Traffic Volume
Source: City of Edmonton (2002)

	School Pop	crossings per day/year	Vehicles Per day/ per year	Patrol	X-walks	Busses
k-9	160	320/57 600	3300/597 300	8	2	Yes

Road Hazard

It's a road hazard at school six that represents an interesting opportunity for school safety audit and lobbying objectives of the Community Leadership Program. Ann elaborates, "The city should go and fix this (See Figure 27, p. 121) because right here we have a house that comes almost to the curb, so whoever's standing here has very, very, not very much room at all, poor, poor, poor [visibility]. I find it's unsafe to even stand there, let alone patrol, because it wouldn't take much for even a car to ride on the curb and hit you. There's very little room, it's poorly designed."

Figure 26
Hazardous Footing at School Six



What is still hard to see here in this photo is that the curb cuts (wheelchair ramps), that were put in to accommodate wheelchairs, are visibly and technically steeper than usual on three of the corners of this intersection, where patrollers have to stand. This is an older part of the city, so these ramps were an afterthought. Transportation and Streets staff didn't really have much room to make the cut more gradual slope (Personal Communication, Rob Metcalf, Telephone Conversation, March 24, 2003). Then white picket fence in the photo is butted right up against the cement of the corner sidewalk. Patrollers or anyone else standing on this corner don't have a safe place to jump to, if, as Ann suggests, a vehicle hops the curb.

To manage the risk of turning traffic around the hazardous corner depicted above, Ann relates "we really worked on them being visible on the corner. And instead [they hold their

stop paddles] at an angle so that the turning traffic would see them before they actually did the turn."

Motorists

"Most of the time my main concern," about this corner relates Ann, "is the turning traffic with the students because the lights, of course, would stop the traffic." What Ann is referring to here is the problem of motorists who try to make right turns on a green light. Motorists in the northbound lane approaching the southeast corner pictured above, often try to turn right into the intersection at their immediate right. The trouble is that pedestrians, who also have a green light and the go-ahead signal from patrollers, think it is safe to cross within the crosswalk.

Summary of Findings

There seems to be no doubt among research participants that the traditional patrol already helps fulfill the first, most global statement of purpose of reducing the risk of road trauma to school children and raising awareness of pedestrian safety among drivers (See Figure2, p.). A higher profile through the CLP would be even better. This study showed that research participants had already implemented the second statement of purpose in the CLP, which focus on patroller presentations within the school and at assemblies. Research participants also put a lot of time and effort managing the patrol. They don't want a pre-packaged thing dropped in their lap.

Content and Format of Presentations

Teacher supervisors were clear and unanimous in their recommendations regarding presentations. Going beyond the school into the community and participating in commercial media campaigns, appear to research participants as mere logistics that they can develop through experimentation. However, research participants all recommended the content of presentations be limited to experiences that, together with disseminating traffic safety messages, would develop patrollers and give them a sense of the importance of the job they

do. Some logistical ideas research participants suggested include starting a lunchtime safety club, adding traffic safety messages to the announcements that students already deliver through public address systems and cross-age tutoring.

Presentations Beyond the School

Dorothy at school had already expanded the audience for patroller presentations beyond classes and assemblies to community meetings held at the school. The rest of the research participants were able to identify existing activities or professional or personal links they might exploit to expand the audience for presentations by patrollers, but would be most comfortable with individuals or groups they have existing relationships with. Charles for example, has ties with the business owners in the community where he is transferring to another school. Helen at school five has links with a parent who works in a rehabilitation hospital.

Safety Audits

Views on the third objective of the CLP: conducting neighborhood safety audits were quite polarized. Dorothy at school two had an adult professional complete a school safety-audit several years ago. But the word 'audit' triggered strong negative reactions from the other research participants. Rene at school 1 thought an audit would take up time she didn't have. Teachers at schools three through six did not want to see patrollers or children in the role of identifying school or neighborhood traffic hazards. What did they hear when they heard the word *audit*?

Barriers to the Safety Audit Process

Any discussion of supports for the safety audit process requires mention of some of the threats to this component of the CLP. Keeping in mind that a professional safety audit had been done at School 2; the first objection to the safety audits came from Fran at school one. She thought this component of the CLP might take too much time to develop. The second objection to safety audits was voiced by all four of the remaining research participants when

they read over the safety audit goal. These four remaining teacher supervisors expressed shock: "Grade 6 kids dictating what is and what isn't safe? [This just] doesn't seem feasible, or reasonable…Because, safety is a major issue for Edmonton public schools." This reaction may need further exploration. Is this about liability? About infringing on the role of teacher supervisor or principal? Or, is the term 'safety audit" just something they have never heard of?

The Unknown

Support for this latter interpretation, that four of the teacher supervisors interviewed objected to term safety audit because it is just an unknown, is evident in our subsequent conversations. Recognizing their incredulity, I linked the audit/risk management tasks to math and language arts activities: something they are familiar with. Once I did that, these same four research participants quickly switched positions and began brainstorming ways to proceed with safety audits.

> You can turn [the safety audit] into a questionnaire, or a survey. There again they can graph it. They can also do the same thing at home. I've done that where they've had to do the things within the home as well.
>
> See, that's data analysis…and we're looking at doing that in the schools, and using the computer. I think, you know, gathering and interpreting statistical data, which is part of their math anyway, I think that would be really, I think that would be great. Yeah, exactly, yeah, and it's practiced and reinforced outside of the school environment, I agree.
>
> Yeah, gathering and reporting statistical data, I think it would appropriate for them. I think that designation of safe routes home, you know, I think there's some common sense things that [students] could reinforce. You know, I think they could be involved in the safety audit process.

It's clear that sensitivity to language and the presentation of practical examples would go a long way to position the goal of safety audits favorably.

Risk

The reasons behind their enthusiasm for the CLP are twofold. First, it offers research participants a means of enriching the routine duties of school crosswalk guards and developing the leadership abilities of these students. Second, it offers opportunities to share more broadly

the huge responsibility they believe they bear. The risks that create this burden are summarized below.

Risks Associated with Environment & Equipment

Risks associated with the environment include time of day, weather conditions, road design features, complexity of traffic (cars, bicycles, skateboards, roller blades, pedestrians), traffic volume and congestion. In terms of risks associated with equipment, the wearing of orange vests by patrollers helps manage risks posed by lack of visibility to children and motorists due to their varied stature at 11-12 years old. Equipment such as benches, and bus shelters can also impede line of sight for patrollers, teacher supervisors, pedestrians and motorists. All of these risks can be found in Van der Molen's (1981) traffic system characteristics (Figure 5, p. 33).

Objective Validation

Another key finding of this study is that research participants' subjective assessments of traffic risks are supportable with objective data. For example, motorist behaviors that teacher supervisors expressed concern over, show up as those that most often lead to pedestrian injuries in the statistics shown in Table 7 on page 42.

The compilation of traffic volume estimates from schools one through six in Table 2 on page 36 offers further evidence of the validity of research participants' perceptions about risks posed by busy intersections. Existing statistics: school days in a year (181), traffic volume estimates (1900-6700) and a little math speak volumes in favor of actual or objective risks they identified. Hence, their perceived risks are not far off actual numbers.

Risks Associated with People

Top of mind among research participants of course, is the psychological and physical safety of patrollers and elementary school children. Teacher supervisors expressed a great deal of fondness for patrollers and their other students. With serious concern, therefore, teacher supervisors reported emotional risks that patrollers endure: boredom, being distracted by

conversations with friends, being bullied, assaulted, spit upon, sworn at by motorists, and disregarded by jay-walking parents. They are also aware of the risks posed by apparently unpredictable behavior of the youngest elementary school children that are beyond their control and that of patrollers. Naturally, they are concerned about the emotional losses for students, teachers and parents should their efforts to manage risks fail.

Isolation

Although they are aware of counterparts at other schools, whom they have never talked to, and are supported by visits by AMA regional coordinators up to four times a year, teacher supervisors manage risks in day-to-day isolation. Compounding the isolation is the reality that while bound by the liability issues common to all teachers, managing traffic risks probably places them inescapably at more at risk legally than other teachers face. "The bottom line, if something goes wrong, you're the one who's responsible." Related to their sense of isolation is lack of recognition. Although flattered and encouraged by being singled out as exemplary for this study, research participants alluded to a lack of recognition for what they do.

Risk Management Practices

Using Brown's list of risk management tasks, as shown in italics, it is fairly easy to match standard practices to the risk management behavior reported by the teacher supervisors who participated in this study. Teacher supervisors report performing standard risk management practices such as *identifying* the above mentioned emotional, environmental and equipment related risks. They also report *evaluating* the *severity* (e.g. traffic volume as *busy*) and the *frequency* of risks (e.g. every day, usually in the morning). Research participants identified risks that they can assert some influence over such as which intersections are patrolled and where patrollers are stationed at those intersections. They also identified risks, such as the behavior of motorists, that they don't perceive having any authority over.

Teacher supervisors all report common options for *reducing, transferring* or *avoiding* risk. These common options include organizing patroller presentations to classmates and using newsletter notices to remind parents and students of risks such as icy road conditions. To evaluate their risk management strategies, teacher supervisor monitor behavior at school intersections either right at the crosswalk or from positions such as school windows where they are not visible to pedestrians and patrollers. They also encourage patrollers to identify, report and monitor risks.

Subjective Approach to Risk

Another critical finding about teacher supervisors is that their approach to risk is subjective. That is, like most of us, they use perception and judgement to identify and manage risk. Evidence of a subjective approach to risk is present in the informal language teacher supervisors use to describe traffic risks. For example, they describe traffic volume with the word *busy,* a *mid-block dash* as "the little ones just run out' and injuries and fatalities with the euphemisms *it* and *something*. Lack of statistical evidence does not affect their level of concern.

Responsibility for the patrol comes with the job of being a grade six teachers, but some of the research participants do not actually teach grade six. One is a principal, the other a teacher's aid and the other a former grade sixes teacher. The former grade six teacher, now teaching grade five, has not "been teaching grade sixes for years" but just kept doing the patrol.

Not one of the research participants was able to give clear reasons for why they do it. "Maybe coming form a physical education program. Where injuries can occur so easily?" "I never thought about it, just kind of neat to do, just running something, and a sense of accomplishment."

FIVE
DISCUSSION

The Community Leadership Program

It's great–Katherine
That's ok they are doing that already–Fran
I think this is important–Charles

This study was successful in answering the main question about how research participants view the community leadership program. They view it in a very positive light. The magnitude of risks they manage in their current roles and the risk sharing or support offered by the CLP are pretty good reasons for being enthusiastic about this program. Substantiating these risks in quantitative data and the literature revealed compelling arguments for developing the CLP. The research process also led to the discovery of useful resources.

Based on the literature review and findings of this study, I have come to the conclusion that safety audits are the foundation of the CLP upon which its other goals depend. A related conclusion is that developing safety audit activities is very feasible. Yet another conclusion is that safety audits and developing the CLP will likely aid research participants' risk management activities. Based on these conclusions this discussion focuses primarily the safety audit component of the CLP. Lest this conclusion be missed, teacher supervisors are in very vulnerable positions given their legal responsibilities and liabilities. Hence safety audits and formal recognition for current teacher supervisor activities appear me to be a priority.

Logistics for the CLP

Research participants offered numerous practicalities that need to be addressed to develop the CLP. These practicalities include links with the curriculum and time for additional work during lunchtime or after school. More important is the finding that they want to develop the CLP themselves. They also communicated an interest in tailoring CLP activities in a way that develops patrollers and a preference for use existing relationships in the larger community to shape any patroller activities beyond the school.

Research participants did, however, express initial concern about the challenges of involving elementary school students in evaluative activities such as safety audits. During interviews, research participants responded well when I linked the safety audit to instructional activities they are familiar with. The familiar and relevant activities that engaged them included take home questionnaires gathering and interpreting statistical data and using computers to graph results.

Conclusions

From these findings, I have concluded that the safety audit component is central to creating meaningful program. Yet, this component of the CLP is controversial. Interpreting the results of this study to research participants could help position the safety audit activity as beneficial.

Recommendations

The informal written safety audit that Dorothy created for school two and the recent efforts at Crestwood school (See Appendix E) could be used as non-threatening examples that represent a range of safety audit activities from systematic to ad hoc.

Although research participants expressed the desire to develop safety audits and other components of the CLP themselves and other teacher supervisors are likely to want the same freedom, it might be wise to engage the participants in this study in developing and posting examples of their efforts on the AMA website or their school website. This would capture their safety audit experiments and make them available for other teacher supervisors across Alberta. Such information, if linked with known learning activities, could decrease resistance and increase the rate of adoption across the province.

Risk Management as a Theoretical Framework

This study has employed the theoretical framework of risk management and its three major categories: risks associated with environment, equipment and people as a lens for understanding the experience reported by research participants. The utility of this framework

however, goes beyond research. For one thing, it links the experience of research participants to the language of risk management. In so doing it can aid lobbying efforts. The three categories of risk also offer convenient segments of risk from which a range of risk management options can be justly chosen. And on an educational level, risk management and the three categories of risk offer skill building that applies to many human activities.

Hence, in addition to the logistics and recommendations pertaining to developing the CLP, the following paragraphs briefly capture findings that fit into the categories of risks associated with environment, equipment and people. Within each category of risk, I discuss the match between research participants reported behavior and the five generic risk management tasks presented earlier. As an aid to memory, the five risk management tasks that are addressed within each of the main risk categories are

1. risk identification (hazard assessment),
2. risk evaluation (frequency, severity),
3. risk adjustment or control (options to retain, reduce, transfer, or avoid risk),
4. risk management plan [choices],
5. plan evaluation and update [monitoring].

(Source: Brown, 1998.)

Risks Associated Environment

The finding that research participants identified risk factors associated with the environment is evident in description of factors such as traffic volume, time or rush hour, weather, traffic congestion in the morning, and seasonal changes that affect road conditions. Research participant reports also match risk adjustment or control strategies for managing environmental risks. Katherine's decisions at school three offer an example. She chose to attempt directing pedestrian traffic that used to flood across the street in front of her school to the crosswalk. She made a plan that included notices to parents, monitors pedestrian traffic and evaluates her progress.

Use of the term *busy* to describe traffic volume, another risk associated with environment, suggests that research participants have identified this risk and evaluated it to the extent that it seems different at different times of the day. Trip reduction programs are available, but the risk posed by traffic volume may have to be lived with even though may heighten risks associated with other factors in the environment such as the poor footing for patrollers on corners at school six.

The conclusion I have drawn from these examples of environmental risks is that, while the efforts research participants reported seem effective, they do not approach risk management in a complete or systematic manner. Nor are they aware of information and services that could help them evaluate or measure environmental factors such as traffic volume in a systematic manner.

Recommendations

After considering the findings and the above conclusions pertaining to the management of environmental risks like traffic volume, I recommend that the AMA explore the use of resources available from the City of Edmonton. This recommendation fits with the Mission Possible emphasis on partnerships. Available data could be useful for learning activities, lobbying or engaging community cooperation.

Examples

The literature review for this study identified numerous resources, such as City of Edmonton traffic volume data and procedures for measuring traffic volume. A partnership with the City could be used to introduce knowledge about road design issues to the patrol, while determining the need for added traffic facilities (e.g. a painted crosswalk at school three, adjusting the wheel chair ramp at school six). The neighborhood maps included in the findings for each of research participants' schools are also available through the City of Edmonton and represent another tool for learning about school traffic environments.

Risks Associated with Equipment

The complexity of risk makes it is difficult to separate risks associated with equipment from people who use it. Nevertheless, the data and literature review revealed that equipment such as benches, bus shelters, parked vehicles and buses occasionally impede the line of sight for patrollers thus limiting their effectiveness and increasing their exposure to risk along with the exposure of younger students. The use of bicycles and roller blades pose risks. Visibility is also a problem for children and motorists.

Conclusions

The risk of visibility for patrollers and the strategies for dealing with it exemplify the five risk management tasks. At some point, patrol program administrators identified visibility as a risk, evaluated whether something should be done about it. They considered the options and created a plan to purchase, store, distribute and maintain brightly colored safety vests for patrollers to wear. Encouraging patrollers to make eye contact with the people using vehicles, busses, bicycles and roller blades, to enlist their attention before allowing pedestrians to enter the crosswalk is an added strategy.

Recommendations

As mentioned in the literature review and Chapter Four, the City of Edmonton Transportation and Streets Department as well as Edmonton Transit have policies and procedures for placement or addition of equipment like traffic lights, bus stops, benches and shelters (Transportation and Streets, 1994). Also, Edmonton Transit is currently researching ways to manage student behavior and thus increase bus safety.

To address risks associated with equipment, a good first step might be for the AMA to start some dialogue with City of Edmonton administrators and establish a working relationship relevant to the impact of CLP school safety audits. The data collection analysis and reporting

may require some customization. In terms of bus safety, the AMA may also be interested in dialogue with Edmonton Transit.

Risks Associated with People

Little children just run out.
You can't control them.
Patrollers are mostly bothered by the little ones who don't listen to them.

The literature review and findings for this study of teacher supervisors identified the magnitude and complexity of traffic risks associated with people. Teacher supervisors interviewed for this study performing the first task in the risk management process by identifying risks associated with people. These risks include bullying, young children who run into approaching traffic, the poor role modeling of parents, motorists turning into occupied, patrolled intersections and speeding and the specter of emotional loss should an injury occur. Research participants employ the second risk management task by observing that traffic volume is busy, and that non-compliance with safety rules is most frequent at the start of the school year.

As teacher supervisors have no authority over individuals not associated with the school, this section of the discussion deals only with risks associated with children as road users. These risks are closest to home for teacher supervisors and patrollers. Based on limits of data collected for this study, I have concluded that critical knowledge is not being incorporated into research participants' risk management activities.

Conclusions

Research participants identified the apparently unpredictable behavior of the youngest elementary school students as a risk, but have assumed that little can be done about it. The trouble is, the safety of these young children is left to some extent in the hands of patrollers who have not themselves fully developed critical road user capacities.

Recommendations

The following recommendations are tied to research findings but are aimed only at providing options for teacher supervisors and patrollers at their schools.

Risks posed by the developmental limitations of children, as road users should be exploited as a learning opportunity. Teacher supervisors should be encouraged to enhance their knowledge and skills pertaining to child development and learning in the classroom by learning how developmental issues play out in the more risky traffic environments. This learning should also be targeted at an appropriate level to patrollers as self-knowledge and background for understanding and dealing with younger children. Such an initiative may reduce the risks of both the stress and boredom that patrollers experience.

Where opportunities exist, school assemblies where parents attend, day care workers and the parents who pick up their young children might be included in such educational efforts. Everyone involved would have a better sense of the risks associated with children at different stages of development. Education efforts could in fact address the are predictable transportation risks that occur to members of a community over their lifetime.

Examples

The Kerbcraft table of contents included as Appendix E, offers a good starting point for stakeholders who want to integrate developmentally sensitive pedestrian education into CLP or other initiatives. The entire handbook as well as a volunteer's forum is available on the Internet at www.kerbcraft.org.uk/.

The recent press release about patrollers at Crestwood school (See Appendix E), which was not part of this study, represents a systematic, if limited risk management process that other teacher supervisors could employ. Led by their teacher, patrollers identified parking violations as a risk to pedestrian safety. They evaluated the severity of this risk by observing and counting

parking violations, planned and launched a poster program and evaluated the impact of the posters.

Teacher supervisors could explore the feasibility of a carefully crafted home assignment, such as a family transportation journal. Lonero's factors affecting motorist behavior (see p. 33) and Van der Molen's system characteristics (see p. 34) could be used as checklists to help classify results. And patrollers could report findings to school assemblies through drama or some other activity.

Systems Data

The road transportation system is a large-scale human system whose elements interact in highly complex ways. A systems approach appears to have much greater potential to address the complexity of the road transportation system. (Peter Senge, 1990 in MP, p. 19-20).

The link between the above quote by Peter Senge, and the usefulness of collecting data as part of the safety audit process lies in existing traffic system models (e.g. Van der Molen and Lonero) and the opportunity that patrolled elementary school intersections offer for fairly continuous monitoring of system factors. When you think about it, elementary school intersections are much more ideal circumstances for understanding traffic systems than are available to police on city streets or sections of highway during ad hoc radar campaigns. School intersections are somewhat closed systems that all kinds of motorists and pedestrians use habitually. Where else in traffic do at least four patrollers and often school personnel monitor rush hour traffic?

If this level of surveillance does not convey the systems knowledge power of the patrol program, the potential for long-term continuity of simple, systematic data collection should. Elementary schools are permanent fixtures manned by professionals with a legal mandate to be concerned about what goes on in the road in front of the school (see Figure 11, p. 64). This territorial mandate makes it hard to dispute the value of the closer scrutiny necessary for a thorough safety audit or risk management process.

Patroller Reports

> Ordinary children and their families, after all, successfully avoid accidents every day. We should learn both from their success, and from the lessons to be learned when their strategies fail. Practical steps might include....use [of] local ...quantitative and qualitative data to build preventive strategies embedded at the local level. (Roberts in Gillham and Thomson, 1996, p. 61)

Although patroller reports were not reviewed in this study, the process, content and handling of these reports warrants some exploration. The data suggests that patrollers report when they witness unsafe behavior among students and motorists. Apparently, patrollers are encouraged to include in their reports the date and time of the unsafe event, a description of the vehicle (if they are reporting motorist behavior) and the vehicle plate number. What happens to these reports once a teacher supervisor processes them? Might they be used to insure a subjective/ qualitative component for safety audits? To teach observations skills rudimentary qualitative data analysis?

Patroller Presentations

Besides the yielding data that can be used in patroller presentations, conducting safety audits as did Crestwood patrollers will likely help achieve the goals of the CLP. H. Wagner, a language arts consultant, proposed that it is easier for children to get engaged in language arts activities if the topic they explore pertains to real life problems and issues (Personal Communication, July 25, 1007). Roberts agrees "Not only are children able, in many cases, to identify risks. ...there are materials which enable children to draw on the accident data for their own school, and work on ways of reducing school accidents" (In Gillham and Thomson, 1996, p. 62). Hence identifying traffic problems that patrollers face and using them for language arts and other curriculum objectives are likely to generate both enthusiasm among them and a better sense of the importance of their work: outcomes that research participants identified as lacking in the traditional patrol program.

Summary

Can the CLP and its stakeholders do what common sense and the law have not? My conclusion is that the risk management framework, the five generic tasks for risk management and education through developing and implementing the CLP offer hope.

What is learned about risk management by non-experts identifying, evaluating, exploring choices, planning and monitoring implementation offers opportunities to engage their faculties as risk managers in the informal sector. The portability of subjective approaches to risk and risk management is such that everyone is already managing risk at some level. And better risk management, in my opinion, is what traffic safety education is intended for.

This study has achieved a number of goals besides generating a positive answer to the question of how teacher supervisors view the School Safety Patrol Community Leadership Program. It has taken data provided by teacher supervisors, verified the risks they identified through existing data and literature and, effectively, achieved a rudimentary safety audit of six elementary school intersections where research participants worked at the time of data collection.

Ultimately, this study has demonstrated how the safety audit component of the CLP is central to fulfilling the goal of reducing traffic risks at elementary school intersections, communicating these goals to the community and supporting the dedicated work of teacher supervisors. It has discussed barriers to safety audits, and identified practical tools such as Internet technology, partnerships, books and programs that can be used to complete safety audits.

Suggestions for Further Study

Some suggestions for further study include 1) conducting a focus group with research participants to verify these findings, 2) using the results of the focus group to develop a web-based survey for teacher supervisors across Alberta and 3) exploring the perceptions of patrollers about traffic related risks.

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Appendix A

Letter to Research Participants

Dear Research Participant,

RE: Interview Consent Form
Enhanced Patrol Program Research

I having read the letter from the Alberta Motor Association Provincial Patrol Program Coordinator Mary Jones, requesting my participation in research about the enhanced patrol program agree to participate with the understanding that

1) I will participate in a taped interview for one hour conducted by Interviewer who is acting for the Alberta Motor Association,

2) I will review the typed transcript of the interview to ensure it is accurate, then promptly return it to ensure it is accurate, then promptly return it to the interviewer with corrections or comments,

3) I may withdraw from the research project at anytime without penalty,

4) I may request that all or some of the data collected be omitted at my request,

5) My name and/or the name of my school may not be used at my request,

6) The transcript will not be shown to anyone except the faculty advisor, professor Dave Anderson, without permission being granted. Pseudonyms for you as a participant and your school will be used to minimize the chance for you to be connected with the information in your interview transcripts.

7) That the use of the data will be subject to the same procedures and constraints as outlined in this letter and the Ethics Review Application,

Signature Date

Appendix B

Community Leadership Goals/Interview Protocol

School Safety Patrol Community Leadership Program/Interview Protocol

The following Outline of the School Safety Patrol Community Leadership Program served as an interview protocol.

Purpose

- To reduce the risk of road trauma to school children and to raise awareness of pedestrian safety among drivers by expanding the role of the School Safety Patrol in the Community.
- To use school safety patrollers as ambassadors for traffic safety by arranging for them to speak to classmates, school assemblies, community groups, service clubs, and news media etc.
- To train and equip school safety patrollers to conduct neighborhood safety audits, including designation of "safe routes home: for elementary-grade students.
- To use school safety patrollers in appropriate safety awareness campaigns.

Resources

Patrollers, Parents, Teachers, Police service

Process

- Maintain existing school safety patrol activities
- Develop presentation materials and provide public speaking training at annual camp
- Develop spokesperson selection criteria
- Publicize the program
- Schedule spokespersons and presentations
- Conduct safety audits, collect data, present results
- Lobby for required changes
- Identify safety campaign
- Select spokespersons
- Produce spots

RESEARCH

A majority of those surveyed in the 1994 AMA Member Survey felt that the School Safety Patrol is an effective way to keep Alberta children safe from traffic injuries around schools. However, this resource is underutilized. This group of individuals is ideally positioned to contribute to the traffic safety education of their peers and under-classmates. As previously shown, numerous studies show the need for lifelong learning.

EVALUATION

Evaluation forms from students and other audiences
Pedestrian and cycling injury data

Source: AMA Mission Possible, 1996, p. 92-93

Appendix C

Sample Interview Questions/Probes

Sample Interview Questions/Probes
School Two
June 18,1998

Interviewer: A couple of things today. I think I have about 45 minutes rather than an hour. I may be taking some notes. That's just to help me interpret the interview later. And don't worry about too much about grammar or stammering, that won't appear in the transcript.

Interviewer: Do you live in the area around the school?

Interviewer: Basically, you have about 23 years as a teacher?

Interviewer: You live in..... Do you belong to any other social or recreational organizations?

Interviewer: So, it's good to get your perspective [recovering myself] on it from a school...How many students do you have?

Interviewer: The next thing I'd like to do is just jump to these goals and have a look at them. Just some of your thoughts about say the first one.

Interviewer: So, at the crosswalk, could you describe one of those interactions with an adult.

Interviewer: So how does that rate in terms of size around the city?

Interviewer: I love that!

Interviewer: That's such a wonderful model. It works really well. If you were going to think about this as a corridor between your school and the community and the school. What do you have to say about what goes on there, and what those interactions are like?

Interviewer: [Laughter] and the school patrol supervisor here?

Interviewer: I see. [Should I be interviewing her? Did the coordinators know? Well, of course, who is going to do the interview a principal or a teacher? Duh?]

Interviewer: What type of vehicles? Passenger vehicles?

Interviewer: OK that gives me a bit of the idea. In terms of your participation at the crosswalk, could you talk about what works in terms of your school personnel around the crosswalk?

Interviewer: So you have some rules about that?

Interviewer: What kind of feedback are you getting from the community?

Interviewer: Could you describe any other interactions you have with teachers regarding the patrol?

Interviewer: Because garnering community support is seen as a major obstacle [source].

Interviewer: So she hears that as well? Could you tell me how these separate roles evolved?

[Good question on my part.]

Interviewer: So, does that allow her to get started in the classroom?

Interviewer: That's great, because three times a day is a lot for one person. Would you say that your role, you have a bit more contact with the community?

Interviewer: So, you handle the community relations? Could you talk about what patrollers are learning out there in the crosswalk?

Interviewer: So, what I'm hearing really is that [you and the patrols are] reinforcing safe pedestrian behavior as a normal part of every day travel? [A good bit of summary/paraphrasing on your behalf Elizabeth!]

Interviewer: Let me look here [at the goals] where we are. I'd like to talk to you about what kind of opportunities there are available for the enhanced role. If we just go back to some of these other topics. What are your views on this type of enhanced role for patrollers?

Interviewer: So, they will be reinforcing, demonstrating what they are doing and also telling them what the consequences are. Could you tell me more about how that conflict management team starts up in September?

Interviewer: So, does this happen as needed out in the playground?

Interviewer: What about going to the different classes. How frequently would they go?

Interviewer: so, this would be giving an orientation at the beginning of the year.
[I've noted here that I've done a good job of verification through paraphrasing.]

Interviewer: Oh wow, that's wonderful. So, you are not just catching them doing…breaking the rules or being rough. It's reinforcing positive behavior. Are any of the patrollers in that conflict management?

Interviewer: So, what I'm hearing form you is that presenting to the rest of the students about the patrol would not be a big stretch for you or your staff.

Interviewer: What about to community groups outside the school?

Interviewer: Is that a result of your contact with the injury prevention center.

Interviewer: This was someone from a private? Company.

Interviewer: If you were to look at this list of [looking at the program goals] Let's go on to the next one here. Have you done anything on safe routes home?

Interviewer: Sounds like safety is really part of your system

Interviewer: Looking at this list (interview topic #). What would some of the opportunities or barriers to involving them or speaking to them?

Interviewer: What are your thoughts about presentations outside the school?

Interviewer: You have a parent advisory council working with the school? How would you rate their involvement?

Interviewer: Any you thing this would happen here though? And do you like the diverse audience because?

Interviewer: You have mentioned partnerships, What other partnerships?

Interviewer: How frequently does that come out?

Interviewer: Sort of like an annual?

Interviewer: I'm just hearing a tremendous commitment to safety coming from you. How typical is that around the city? Everyone should be more concerned about it. Why professionally did you come to holding it with such importance?

Interviewer: You accept that as a normal part of the activity?

Interviewer: I read your audit and wondered from what you are saying, whether you would be interested in playing a leadership role in a sense. You said you are more than willing to share [your programs with other schools.] How might you envision your role in any kind of leadership role?

Interviewer: So, you are really getting at local ownership of what you have here [maybe not if she is
Interviewer: Everyone feels that they are working in isolation.

Interviewer: Would you be interested if there was an opportunity to meet with other teacher supervisors? Do you have any contact with the other schools [that have patrols]?

Interviewer: What would you allow? Would it be during school time or after school? [This is a principle saying this.]

Interviewer: So, you are willing to commit some time to that?
[I'm incredulous]

Interviewer: With the other schools..do you know the principals there? You've got that arranged?

Interviewer: That's a really exciting idea. What about cross-age events, say Junior High.

Interviewer: You don't want that kind of attitude in your school?

Interviewer: What other role might the AMA play in the development of the enhanced role?

Interviewer: One issue that comes out…schools only have a very general policy about violations. What is your policy?

Interviewer: If the AMA were to present here on …?

Interviewer: What would be the next step in the enhanced program?

Interviewer: So, you would you like to see some more training for supervisors?

Interviewer: For example, an evening presentation with the AMA with Edmonton patrol supervisors where you could go over these issues and have some reports.

Interviewer: What I am hearing you say is that teacher supervisors should develop a curriculum or program.

Interviewer: Are you on-line here?

Appendix D
Sample Transcript Excerpt

Sample Transcript Excerpt
School 5
June 24, 1998

Interviewer: It's a great little microphone and it puts this out of the way for us.

Helen: Okay.

Interviewer: Oh, that water looks so good. Actually, maybe to start, though, I'll need your John Henry on these permission letters. I have 2, one for you to keep.

Helen: Oh, that's, that's okay. A little warm, huh?

Interviewer : Yes. I came from, I had an appointment downtown, and I came from there, so. ..... little ....., okay. And if you wanted to sign the other one for your own sake, and.

Helen: I don't think there'll be any problem using the name of the school or anything like that.

Interviewer: Okay, we'll discuss that, ... get the results back. Actually, the other thing that I should have from you is home address I could send the transcripts. Do I have your name spelled correctly?

Helen: Okay. I'm sure, at least we could be able to get one of those parents to come to the camp for sure. For sure. The other one I don't know, but the one I do already. Okay.

Interviewer: And I'm here not only to learn about this issue, but to learn how to do interviews in research, so.

Helen: Sure.

Interviewer INTERVIEWER: Let's see. When I give you the transcript back, I tend to, to transcribe it verbatim, but it doesn't come back the way that you would do when you write it. It doesn't, you know, so, not to worry about that. It's just great to get this information. Okay, so, let's just start with some easy questions. How about, could you tell me a little bit about your professional background?

Helen: My, like, where I've been teaching since I began.

Helen: I've been teaching since 1989 with Edmonton Public Schools. I started in the inner city teaching in a very small school. I taught grade 1/2, a combined, for 4 years. I moved over to Portland school and I taught grade 2/3 combined for two years. And then I came here, ... currently teaching grade 6 for the past 3 years.

Interviewer : Okay, so, have you been, how did you get interested in the, in supervising of patrol?

Helen: It comes with the grade 6 job.

Interviewer: Okay.

Helen: Yeah, and now its just part of leadership. We use that as one of, that's just one of the very, we try and look at it as more of a leadership kind of role rather than just patrols. It's not just out there. It's just one of the leadership roles that kids can assume in the schools.

Interviewer : That's great. That's great, it feeds into the enhanced program quite well. Do you reside in [intercom interruption], where was I now? Do you live in this area, or somewhere...

Helen: I'm in Sherwood Park.

Interviewer: Right, sorry, I saw it.

Helen: And I'm quite familiar with the community, and the kids in the community, and the parents.

Interviewer: Outside of work, do you belong to any recreational organizations, or social organizations?

Helen: And, well, just within the last two years, no, because I'm a new mom. I've got a 17 month old, so, when I'm not at school full time I want to be with my little girl. I mean, we attend swimming lessons with her, and gymnastics, and things like that, but not, not so much for myself right now.

Interviewer: Okay, great. I imagine that would...

Helen: The gym, I go to the gym.

Interviewer INTERVIEWER: Good for you.

Helen: I try.

Interviewer INTERVIEWER: Just looking at the and the goals for the enhanced program, I think I sent this over the other day.

Helen: Yeah.

Interviewer INTERVIEWER: Do you have any questions about the goals or any...

Helen: No, I think they're great. I really like them.

Interviewer INTERVIEWER: What kind of benefits do you think participation in the enhanced program would have you for you, or?

Helen: I think it's going to empower the kids more. It's going to give them more ownership of patrols rather than, it's almost become self, you know, in a sense, self directed because when I think of the two girls that are going to go to patrol camp this summer, this is going to be an outstanding experience for them because they're very quiet, they're nice, responsible, quiet, passive kids who would do something if you asked them. But it's putting them in a position where they're going to just, they're going to, it's almost they're going to have to develop some assertiveness skills to do this. I think it's, it's an incredible opportunity for these, I'm thinking of these two in particular.

Interviewer: it's just great.

Helen: Well, it's really big, because if you take a look at even a number of kids out here who don't wear bicycle helmets, who double or triple. I'm out there with my patrols, checking on my patrols and I'm telling kids to get off their bikes. So it's, this is, it's time.

Interviewer: I'd like you to, if you wouldn't mind, just sort of draw me the intersections where your, one of the intersections where your, patrollers are, and ask you a few questions about that.

Helen: There's a crosswalk right here.

Interviewer: Is that where they patrol?

Helen: Yeah and they're right on 45th Ave., which is a very busy avenue, and we have patrollers here, and we have patrollers here. We have 4 out.

Interviewer: How many patrollers do you have in the whole program?

Helen: This year I had, well, I'm not, this year, just this past year, and I had 22.

Interviewer: 22.

Helen: So, I had, it was really easier, it was much if I had, for example, one child going out, just one shift. When kids start doubling up they start getting tired, and it's easier to give up on 'cause I had kids pulling double shift, shifts which meant they were out 8 times in one week, which is a lot to ask from kids, and then ask them to do other leadership activities. So, what we did is we tried to make sure that they had one day and that's all they had to worry about, so they were out for their 4 times in that one day, and then they were done for the week. And then I had my two patrol captains, that would free them up to go out there and supervise, and monitor to make sure that they were doing their job. So, they weren't always on duty. The captains really didn't have to.

Interviewer: That sounds great, so was this an increase over other years, 22?

Helen: Yeah and I go out and I get the kids. If I have to, I go big, I'm going to grade 5 next year to get more, and we also changed for, for next year we've also changed it so that we're having morning crew. Some kids are more able to come at different times of the day, so we've got a lunch crew and a morning crew. So, typically we have 8 kids on a day, so the kids are before and after crew, and then at lunchtime there's a lunch time crew as well, and then they're done.

Interviewer: So, you're basically adapting to their needs and when it's most feasible for them to do.

Helen: Yeah, well, and also, because we've got a basic literacy program here at our school, we're a site, and that's for kids who are in division 2 who are functioning about grade, 3 grade levels where they're supposed to be, it provides, they're bussed in, so it provides them an opportunity to provide some leadership. Because they leave to leave right after school, or they don't get here, so they're the ones who are willing to do lunch. They'd love to that stuff, so they can.

Interviewer: Great. Well, that sounds, that sounds really good. Could you just talk about some of the traffic that goes through here? Is it, types of vehicles, or?

Helen: You name it. You name it we get it. What concerns me the most in this particular area is the kind of, I guess you call emotional drivers. You would not believe the amount of verbal abuse my patrollers take. It's incredible. It blows my mind. I mean, you have grown adults screaming out the windows, swearing at kids because they have to, they were they've been required to stop. And it's really hard on them, and they do take a lot. But in terms of vehicles, we don't get any, like heavy vehicles.

Interviewer: Trucks or.

Helen: Nothing like that, but in terms of the kids whipping down the street, the teenagers, we get, you name it.

Interviewer: What destination are you going through? Is this when you're get teenagers?
Helen: this is where all the traffic flow is. This is where it all is.

Interviewer: Where are they headed? Home, or where?

Helen: Yeah, our main artery, yeah,

Interviewer: Okay, and what time of day is worse?

Helen: Mornings, when the, when the patrols are big, lunch times when people are going to and from lunch. Mornings are really bad. Probably more so than any other time of day.

Interviewer: And what would you say that's ...

Helen: Kids are dropping kids off at school, and then trying to get away to work, and the people just going to work, teenagers going to school, teenagers going to jobs, whatever. There's lots of, yeah.

Interviewer: Okay.

Helen: Mornings seem to be the most.

Interviewer: Okay, that's great, that gives me an idea of what the challenges you, you face. Just a comment on that, when I first started looking around at this, I was really shocked to the fact, you know, basically what patrollers put up with, and.

Helen: It worries me, and you know, and, you know, they're, like, they're just trying to do their jobs, but I tell them, you don't answer back, you don't say anything because you don't know if that person is, you know, can say something like that is that, you know, you don't know, you can't predict that person's behavior. If you say something, is it going to light that person's fire and they're going to get out of the vehicle and say something or do something to you. Just take, ignore.

Appendix E

AMA School Patrol Media Release

Crestwood School Patrol Parking Safety Audit

Alberta Motor Association
Administration Centre
P.O. Box 8180, Station South
Edmonton, AB T6H 5X9

News Release

FOR IMMEDIATE RELEASE: 20 FEBRUARY 2003

Concerned AMA School Safety Patrollers Appeal To Motorists With Handmade Signs

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AMA School Safety Patrollers at Crestwood School have come up with an innovative solution to a serious traffic safety problem—and results have been very positive.

The grade 6 students were very concerned about the increasing risk to fellow students caused by drivers ignoring no-stopping zones.

"It's a serious but very common problem around many schools," says Josy Wicentowich, Provincial Coordinator, AMA School Safety Patrol. "Parents may think it's not a big deal. They claim that they are just stopping for a second but it obstructs the view of children trying to cross the street and it only takes a second to overlook a child on the road."

But, rather than complaining or ignoring the issue, students at Crestwood School took positive action and are now taking their messages to the street. They posted dozens of colorful, handmade signs along the curb appealing to drivers to obey the law and keep kids safe.

Teacher Judith Olesen led the entire grade 6 class through a critical thinking activity in which students brainstormed ideas. They developed an innovative plan, which also supports learning outcomes of the grade 6 Social Studies, Math and Health curriculums of study.

Under their teacher's guidance, students began with a pre-study survey count. They observed as many as 25 drivers ignoring the law and stopping their vehicles in the no-stopping zone. "We hope our messages will remind all drivers that 'no stopping' really means *no stopping*", said Kay Rollans, AMA School Safety Patroller at Crestwood School.

Initial results of the campaign are very promising. "A lot of people ignored the no stopping signs but today there were virtually no cars at the no-stopping zones," says Harriet Sakon, Crestwood School Kindergarten parent. "I thought they were really effective because they were written in children's handwriting and the sayings reinforced the message that parking in the no-stopping zone endangered children."

--more--

--MEDIA OPPORTUNITY--

Media are invited to a photo opportunity at Crestwood School (9735 - 144 Street, Edmonton) at 10:00 a.m. on Friday, February 21, 2003.

Principal Lloyd Ungeran, Judith Olesen and the entire grade 6 class deserve recognition for their positive efforts to make their community a safer place to live," says Rob Taylor, Vice-President of AMA's Advocacy and Community Services. "This campaign serves as an excellent reminder to children and motorists alike of the risks of traffic and provides students with invaluable experience in leadership and community service."

As a result of the dedication and strong partnership that exists between the AMA, schools, law enforcement agencies and local municipalities, the School Safety Patrol program has achieved and maintained an enviable safety record that is unparalleled by any other program of its type. In the entire 65-year history of the AMA School Safety Patrol program, no one has been killed or seriously injured due to the negligence of a patroller while on duty. There are more than 17,000 students and approximately 550 schools throughout the province involved in the program.

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For more information, contact:

Josy Wicentowich
Provincial Coordinator
AMA School Safety Patrol
(780) 430-5734

Lloyd Ungeran
Principal
Crestwood School
(780) 452-4525

Check the AMA School Safety Patrol web site at: www.ama.ab.ca

Crestwood Elementary School
Source: Alberta Motor Association, February 2003

Appendix F

Kerbcraft: Smart Strategies for Pedestrian Safety
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Kerbcraft

smart strategies for pedestrian safety

A Handbook for
Road Safety Professionals

James A. Thomson
University of Strathclyde

in collaboration with
Margaret Dickson
Inverclyde Council
Linda McBrearty
West Dunbartonshire Council
Alison Motion
Janice Docherty
Drumchapel Road Safety Initiative

DTLR

KERBCRAFT
Road Safety Training

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3	Sample information leaflet
4	Class list form
5	Training schedule
6	Volunteer personal details form
7	Volunteer list
8	Child/volunteer allocation list
9	Letters to volunteers
10	Examples of suitable sites for 'choosing safe places and routes' training
11	'Choosing safe places and routes' manual
12	'Crossing safely at parked cars' manual
13	'Crossing safely near junctions' manual

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Appendix G

Resume for Elizabeth Alke

ELIZABETH ALKE
Work Phone: 780-496-4309 *Home Phone: 780-488-5751
EMAIL: ealke@ualberta.ca or Elizabeth.Alke@gov.edmonton.ab.ca

EXPERIENCE

Research Support Experience

- Designed research proposal process for 6 operational sections of Edmonton Transit
- Consulted with executives to develop feasible research proposals
- Coordinated 15 internal and external studies in 3 years
- Seamless contractual agreements

Research Analyst
1999 - Current Edmonton Transit System (ETS, Edmonton, AB

- Consulted with stakeholders in 6 sections to develop decision-based research (e.g. transit security, system impacts of the youth market, downtown commuters)
- Identified discontinuities between policy and practices and established relationships with stakeholders for the purpose of designing solution-focused research
- Initiated use of software to analyze call center and security incident data
- Lead user, web-survey technology City of Edmonton Department of Transportation and Streets
- Led the ETS Market Research Team

Research E. Alke Consulting
1996-1999 Edmonton, AB

- Master's Thesis on School Traffic Safety: monitoring injury and fatality statistics, fieldwork with community traffic safety educators (e.g. RCMP Community Liaison Officer, Safe Kids, ACICR)
- Capital Health: Environmental scans for Canadian cardiac care staffing levels & Edmonton region health information providers
- Alberta Learning: Literature review for workplace wellness program development
- Albert Motor Association: Research for Mission Possible Traffic Safety Initiative

1976 B.A. Department of English University of British Columbia

COMPUTER SKILLS

Web-Survey Technology, NVIVO and N5 Qualitative Data-Analysis Software, Microsoft Office, Internet, Peoplesoft web-time management